

MEMORANDUM

To: Members of Amherst's Elementary School Building Committee
From: Margaret Wood, Owner's Project Manager
Date: May 5, 2022
Re: Traffic Study Draft

As you may be aware, a traffic study was previously completed for the Wildwood Elementary School site as part of the prior project: at that time no parallel study was undertaken for Fort River. With this project, the Design Team has conducted a study of both sites in parallel, including traffic counts, analysis and proposed changes (typically called "mitigation") in order to compare conditions, possible improvements and associated costs for both sites.

Attached please find a preliminary draft of PARE Corporation's draft of Traffic Impact Analysis. PARE is DiNisco's traffic consultant. Please note that it is draft, and we are sharing with the caveat that it is a draft. DiNisco has asked PARE for the following updates which you will see later in an updated draft once addressed:

- Clarification of some of the tables to make them easier to read
- Clarification of the mitigation (proposed changes) proposed for the Fort River site. As a for instance, the diagram showing proposed mitigation includes modifications to the traffic signal at Main Street, but the report narrative does not mention it.

As the Committee, the consultant team and others in the community review this draft, there may be further updates.

Some of the key points in this document, including a summary of the existing traffic conditions and what can be done to mitigate them, will be presented at tonight's Community Forum as well as tomorrow morning at the 5/6 meeting of this Committee.

Cc: Donna DiNisco, Tim Cooper, Rick Rice, Vivian Low

**TRAFFIC IMPACT ANALYSIS
AMHERST ELEMENTARY SCHOOLS
AMHERST, MASSACHUSETTS**

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MAY 2022



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INTRODUCTION

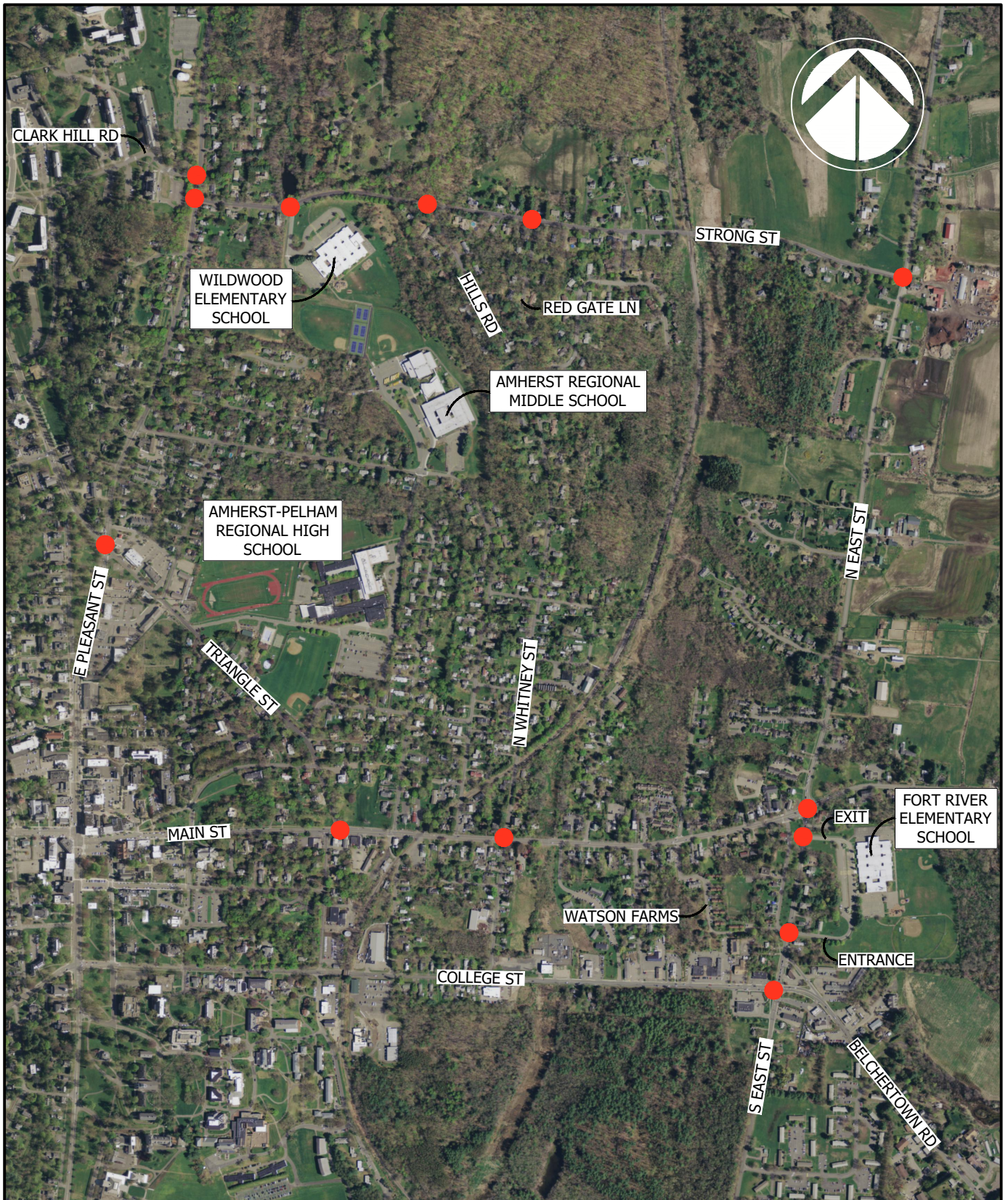
The following report represents the traffic study completed for the proposed elementary school replacement project in Amherst, MA. The Town of Amherst is pursuing the construction of a new elementary school to replace the aging Fort River Elementary School and Wildwood Elementary School. Under the proposed condition, the two existing schools will be merged into one elementary school accommodating 575 students upon completion. The grade structure at the new school is expected to include kindergarten through Grade 5. Grade 6, currently located with the elementary schools, will be reassigned to the Amherst Regional Middle School.

The sites currently under consideration are identified in **Figure 1** and include the existing Fort River Elementary School site (70 South East Street) and the existing Wildwood Elementary School site (71 Strong Street).

This study has been performed in accordance with MassDOT's *Transportation Impact Assessment (TIA) Guidelines*. The study includes an assessment of the existing conditions of the study area including an inventory of roadway and intersection geometrics, collection of peak period traffic counts, review of existing student drop-off and pick-up operations, and an analysis of the crash history of the study area.

Two future build traffic conditions are projected and analyzed. The new school is to be constructed on the Wildwood site under Scenario 1 and the Fort River site under Scenario 2. The future (2029) conditions analyzed were projected seven years from the existing (2022) conditions. Weekday morning and evening peak periods for Existing (2029) and Future (2029) No-Build conditions, in addition to Future (2029) Scenario 1 Build conditions and Future (2029) Scenario 2 Build conditions were analyzed. The study then evaluates the results of the analysis to determine the impact of the proposed development on the adjacent transportation network under each scenario.





● = STUDY INTERSECTION



PROJECT NO. 21245.00

DATE: MAY 2022

FIGURE 1 LOCUS MAP

AMHERST ELEMENTARY SCHOOL
AMHERST, MASSACHUSETTS

Existing Conditions

A field inventory of the existing conditions within the study area was conducted in April 2022. The study area is defined as the significant roadways and intersections in the vicinity of the site that may be impacted by the construction of the school. Listed below are the roadways and intersections included in the study area.

Study Area Roadways:

- East Pleasant Street
- Strong Street
- North East Street
- South East Street
- Main Street

Study Area Intersections:

- East Pleasant Street at Clark Hill Road
- East Pleasant Street at Strong Street
- East Pleasant Street at Triangle Street
- Strong Street at Wildwood Elementary School
- Strong Street at Hills Road
- Strong Street at Red Gate Lane
- North East Street at Strong Street
- Main Street at Triangle Street and Dickson Street
- Main Street at North Whitney Street and South Whitney Street
- Main Street at North East Street and South East Street
- South East Street at College Street and Belchertown Road
- South East Street at Fort River Elementary School Exit
- South East Street at Fort River Elementary School Entrance

Study Area Roadways

East Pleasant Street

In the study area, East Pleasant Street runs in the general north/south direction from the intersection at Triangle Street northward to the intersection at Clark Hill Road and is classified as a minor arterial. The curb-to-curb width varies along this section of roadway, ranging from 28 to 38 feet. The typical cross-section for this section of East Pleasant Street consists of an 11-foot- wide travel lane in each direction and a three-foot-wide shoulder on each side of the roadway. There is a posted speed limit of 30 miles per hour in the study area. There is signage indicating the statutory school zone speed limit of 20 miles per hour during school hours.

Strong Street

Strong Street runs in the general east/west direction and is classified as a minor arterial. Strong Street has a curb-to-curb width of 30 feet with a 5-foot sidewalk on its southern side. Its typical cross-section consists of a 11-foot-wide travel lane in each direction, with a 4.5-foot-wide striped shoulder on its northern side and a 3.5-foot-wide shoulder on its southern side. There is a posted



speed limit of 30 and 35 miles per hour, depending on the direction of travel of the road, with eastbound travel being 35 miles per hour and westbound being 30 miles per hour. There is a school zone speed limit of 20 miles per hour starting at the intersection with Hills Road, spanning westbound to East Pleasant Street. Land use along the roadway is predominantly single-family residential with the exception of the driveway leading to the current location of Wildwood Elementary School. There is a railroad crossing approximately 1,600 feet west of the intersection with North East Street.

North East Street

In the study area, North East Street runs in the general north/south direction from the intersection at Main Street northward to the intersection at Strong Street and is classified as a minor arterial. The curb-to-curb width varies along this section of roadway, ranging from 30 to 34 feet. The typical cross-section for this section of North East Street consists of an 11-foot-wide travel lane in each direction, a five-foot-wide shoulder on its western side, and a three-foot-wide shoulder on its eastern side. There is a posted speed limit of 40 miles per hour for vehicles heading northbound and 45 miles per hour for vehicles heading southbound in the study area.

South East Street

In the study area, South East Street runs in the general north/south direction from the intersection at College Street northward to the intersection at Main Street and is classified as a minor arterial. The curb-to-curb width varies along this section of roadway, ranging from 26 to 36 feet. The typical cross-section for this section of South East Street consists of an 11-foot-wide travel lane in each direction, a 4.5-foot-wide shoulder on its western side, and a 3.5-foot-wide shoulder on its eastern side. There is a posted speed limit of 30 miles per hour. The section of South East Street running between College Street and Main Street has a school zone speed limit of 20 miles per hour.

Main Street

Main Street runs in the general east/west direction and is classified as an urban minor arterial. Within the study area, Main Street has an approximate 28-foot-wide curb-to-curb width with a six-foot-wide sidewalk located on the northern side of the road and a five-foot-wide sidewalk on the southern side. The typical roadway cross-section consists of two, 11-foot-wide travel lanes in each direction, and four-foot-wide shoulders on each side. The roadway width widens as it approaches the intersection with North East Street and South East Street. Main Street has a posted speed limit of 25 miles per hour. Land use along Main Street is primarily residential.



Study Area Intersections

East Pleasant Street at Clark Hill Road

The intersection of East Pleasant Street at Clark Hill Road forms a three-legged, unsignalized intersection. East Pleasant Street forms the north and south legs of the intersection, while Clark Hill Road forms the western leg. Clark Hill Road is stop-controlled, while the East Pleasant Street movements operate freely.

East Pleasant Street and Clark Hill Road both consist of one travel lane per direction. In addition, faded striping is present to indicate the presence of bike lanes. There is signage indicating the presence of a school zone crossing at the southwest corner of the intersection. No striping for crosswalks is present at the intersection. Clark Hill Road provides access to several parking lots for the University of Massachusetts - Amherst. There are sidewalks along the entire eastern side of East Pleasant Street, and a sidewalk starts along its western side at the intersection of Clark Hill Road, heading south.



Photo 1: Faded Striping present for bike lanes on East Pleasant Street

East Pleasant Street at Strong Street

The intersection of East Pleasant Street at Strong Street forms a three legged, stop controlled T-intersection, with approach legs from the north, south, and east. East Pleasant Street forms the northern and southern legs while Strong Street forms the east leg of the intersection. The East Pleasant Street approaches are uncontrolled while the Strong Street approach is stop controlled.

There are striped crosswalks across the southern and western legs, with signage at the southern crosswalk to note a school zone crossing. Sidewalks are located along the western side of East Pleasant Street, as well as on its eastern side starting at the intersection and continuing northbound. Sidewalk is located along the south side of Strong Street.



Photo 2: Crosswalk across south leg of East Pleasant Street



East Pleasant Street at Triangle Street

The intersection of East Pleasant Street at Triangle Street is a 4-legged roundabout with approaches from the northwest, northeast, southwest and southeast. Triangle Street forms the northwestern and southeastern legs, while East Pleasant Street forms the southwestern and northeastern legs. Each approach to the roundabout consists of one lane, with the exception of the southwestern leg, which also includes a right-turn by-pass lane to connect to the southeastern leg. Each leg of the intersection also consists of one exit lane. The circular travel way within the roundabout is striped as a singular 21-foot-wide lane. Sidewalks are located around the circle and crosswalks are provided across each leg with raised medians in between each entry and exit lane.



Photo 3: By-Pass Lane along East Pleasant Street

Strong Street at Wildwood School



Photo 4: Strong Street at Wildwood School

The intersection of Strong Street at Wildwood School forms a three-legged, unsignalized intersection. Strong Street makes up the east and west legs of the intersection and the Wildwood School (indicated as the intended name of the road by accompanying signage) makes up the southern leg. Wildwood School is stop controlled, while the Strong Street approaches are uncontrolled.

Strong Street and Wildwood School both consist of one travel lane per direction. Wildwood School has a curb-to-curb width of approximately 30 feet, while Strong Street maintains its typical width of approximately 30 feet. There is a crosswalk across the southern leg of the intersection. A sidewalk is located along the southern side of Strong Street. Sidewalk is also located along the western side of Wildwood School, separated by a seven-foot-wide grass buffer. The southern leg has striping indicating a 5.5-foot-wide bike lane with bike sharrows along both sides of the road. Striping along the southern leg is faded.



Strong Street at Hills Road

The intersection of Strong Street at Hills Road forms a three-legged, unsignalized, T-intersection. Strong Street forms the east and west legs of the intersection and Hills Road makes up the southern leg. Hills Road is stop controlled, while the Strong Street approaches are uncontrolled.

Sidewalks are located along the southern side of Strong Street. A crosswalk with faded striping is located across the south leg of the intersection. A vertical crest curve is located on Strong Street to the west of the intersection. This curve limits sight distance for drivers traveling along Strong Street in both the eastbound and westbound directions. Additionally, the crest curve limits sight distance for vehicles attempting to turn from Hills Road onto Strong Street. School zone signage is located at the intersection of Strong Street at Hills Road.



Photo 5: Strong Street at Hills Road – sight line obstructed by vertical curve

Strong Street at Red Gate Lane

The intersection of Strong Street at Red Gate Lane forms a three-legged unsignalized T-intersection. Strong Street forms the east and west legs of the intersection and Red Gate Lane forms the southern leg. Red Gate Lane is stop controlled, while the Strong Street approaches are uncontrolled.

Sidewalks are located along the southern side of Strong Street and a crosswalk crosses the southern leg, similar to Strong Street at Hills Road. Each leg of the intersection is comprised of one travel lane and one receiving lane. Land use surrounding the intersection is predominantly residential.



Photo 6: Strong Street at Red Gate Lane

North East Street at Strong Street

The intersection of North East Street at Strong Street forms a three legged, stop controlled T-intersection, with approach legs from the north, south, and west. North East Street forms the northern and southern legs, each of which are uncontrolled, while Strong Street forms the west leg of the intersection and is stop controlled.

No crosswalks or sidewalks are present at any leg of the intersection. The southern leg of the intersection has signage indicating a speed limit of 45 miles per hour for vehicles heading southbound, while its northern leg has signage indicating a speed limit of 40 miles per hour for drivers heading northbound. It should also be noted that the eastern side of North East Street has a few residential driveways.





Photo 7a and 7b: Speed Limit Signs for North and South Legs

Main Street at Triangle Street and Dickinson Street



Photo 8: Staggered configuration viewed from western leg

The intersection of Main Street at Triangle Street and Dickinson Street forms a four-legged signalized intersection. Main Street forms the eastern and western legs, Dickinson Street makes up the southern leg and Triangle Street makes up the northern leg. Dickson Street and Triangle Street are offset from each other with Dickson Street intersecting Main Street approximately 75 feet west of Triangle Street.

Striped crosswalks are located across each leg of the intersection, and sidewalks are present on both sides of each roadway forming the intersection. Pedestrian push buttons and signal heads are present at each end of all crosswalks at the intersection. All legs consist of one travel lane in each direction, with the exception of the eastern leg, which has one lane dedicated to left and thru movements and one lane dedicated to right turn movements.

The signal operates under three phases. The first phase serves the eastbound and westbound approaches concurrently. Following this, the second phase will operate in one of two ways, depending on traffic flow present. The first option will allow for all southbound traffic to move, while also allowing for westbound right turns. The second option will allow for all northbound and southbound travel. This is likely due to the heavy amount of westbound right movements relative to the low volume of northbound traffic. The final phase functions as a dedicated pedestrian phase allowing for all pedestrians to go and will only operate if the pedestrian push button is used.



Main Street at North Whitney Street and South Whitney Street

The intersection of Main Street at North Whitney Street forms a four-legged, two-way stop controlled, unsignalized intersection. Main Street forms the eastern and western legs, South Whitney Street forms the southern leg, and North Whitney Street forms the northern leg. The South Whitney Street and North Whitney Street approaches are stop-controlled, while the Main Street approach is uncontrolled.

Striped crosswalks are present across the northern and southern legs, while sidewalks are present along each side of Main Street, the west side of the South Whitney Street and the west side of North Whitney Street. North Whitney Street has an approximate 8.6% downgrade for drivers approaching the intersection while South Whitney Street has an approximate 6.5% upgrade as it approaches the intersection. This grade does not seem to impede drivers sight lines at any leg of the intersection; however, sight distance is hindered by the presence of bushes for both sight lines exiting southbound.



Photo 9: Obstructed sight line for North Whitney Street

Main Street at North East Street and South East Street

The intersection of Main Street at North East Street and South East Street forms a four-legged, signalized intersection. Main Street forms the eastern and western legs, South East Street forms the southern leg and North East Street makes up the northern leg.



Photo 10: South East Street

The western leg is comprised of two travel lanes approaching the intersection with one dedicated to left and thru movements and one dedicated to right turn movements. The southern leg is comprised of two approach lanes; one dedicated to left turn movement and one dedicated to right and thru movements. All other legs consist of only one approach lane for all movements, and all legs are comprised of only one receiving lane. Striped crosswalks cross each leg of the intersection, and sidewalks are present on each side of each intersection roadway, with the exception of the western side of South East Street. Pedestrian push buttons and signal heads are present at each end of all crosswalks at the intersection.

The signal operates under three phases. The first phase serves eastbound and westbound approaches. The second phase serves northbound and southbound approaches. The final phase functions as a dedicated pedestrian phase and is pushbutton active.



South East Street at College Street and Belchertown Road

The intersection of South East Street at College Street and Belchertown Road forms a four-legged, signalized intersection. South East Street forms the northern and southern legs, College Street forms the eastern and western legs and Belchertown Road makes up the southeastern leg. At the intersection, Belchertown Road exists as a stop-controlled road for vehicles exiting toward South East Street to bypass the signalized intersection. College Streets merges with Belchertown Road, approximately 350 feet southeast of the intersection to allow for travel in both directions. The “bypass” section of Belchertown Road is separated from the rest of intersection by a parcel of land measuring approximately 16,500 square feet and is currently occupied by Northampton Cooperative Bank and its parking lot.



intersection

With the exception of Belchertown Road, each leg of the intersection is comprised of two approach lanes, where one is dedicated to left turn movements and one is dedicated right/thru movements, as well as one receiving lane. As noted prior, Belchertown Road (as it approaches the intersection) is dedicated only to one approach lane for all movements, and is stop controlled. Sidewalks are present at each leg of the intersection.

The intended phasing for the intersection consists of five phases. The first phase will allow for eastbound left turns and westbound left turns. The second phase will allow for all eastbound and westbound travel. The third phase will allow for northbound left turns and southbound left turns. The fourth phase will allow for all northbound and southbound traffic. The final phase functions as a dedicated pedestrian phase allowing for all pedestrians to go and will only operate if the pushbutton is activated.

South East Street at Fort River Elementary School Exit

The intersection of South East Street at Fort River Elementary School Exit forms a three-legged, T-intersection, with approach legs from the north, south, and east. South East Street forms the northern and southern legs while Strong Street forms the west leg. The South East Street approaches are uncontrolled while the Fort River Elementary School Exit is stop controlled.



Photo 12: South East Street at Fort River Elementary School's proximity to signalized intersection

A crosswalk is located across the eastern leg of the intersection. There is a sidewalk and grass buffer spanning the eastern side of South East Street and on the northern side of the Fort River Elementary School Exit. This intersection is only approximately 180 feet from the signalized intersection of South East Street, North East Street and Main Street. South East Street is comprised of one, 12-foot-wide



travel lane for northbound travel and one, 12 foot-wide-travel lane for southbound travel for its southern leg. The northern leg is comprised of two travel lanes for northbound travel and one travel lane for southbound. The eastern leg of the intersection has a roadway width of 27 feet with no striping to delineate lanes. This leg is strictly for vehicles exiting the school and during school operations, it has been observed functioning as two exit lanes; one lane for right turns and one lane for left turns.

South East Street at Fort River Elementary School Entrance

The intersection of South East Street at the Fort River Elementary School Entrance forms a four-way, two-way stop controlled, unsignalized intersection. South East Street forms the northern and southern legs, South East Street Frontage Road makes up the western leg, and Fort River Elementary School Entrance makes up the eastern leg. South East Street Frontage Road is stop controlled, Fort River Elementary School is a one-way road with only receiving lanes, and South East Street has free movements.

South East Street is comprised of one travel lane and one receiving lane for all movements for both the northern and the southern legs. South East Street Frontage Road is a one-way road and is comprised of only one travel lane. No striping exists at the Fort River Elementary School Entrance, but during field observations, it was noted that vehicles tend to enter in either one or two lanes. Sidewalks and grass buffers are present on the eastern side of South East Street.



Photo 13: South East Street at Fort River Elementary School Entrance



Existing Fort River Elementary School and Wildwood Elementary School Operations

Review of the existing traffic conditions at and around the existing Fort River Elementary School and Wildwood Elementary School were completed through field observations conducted during school arrival and dismissal periods. All field work was conducted on February 2, 2022 and February 10, 2022 during typical school operations. The following describes the traffic operations observed at each school.

Fort River Elementary School

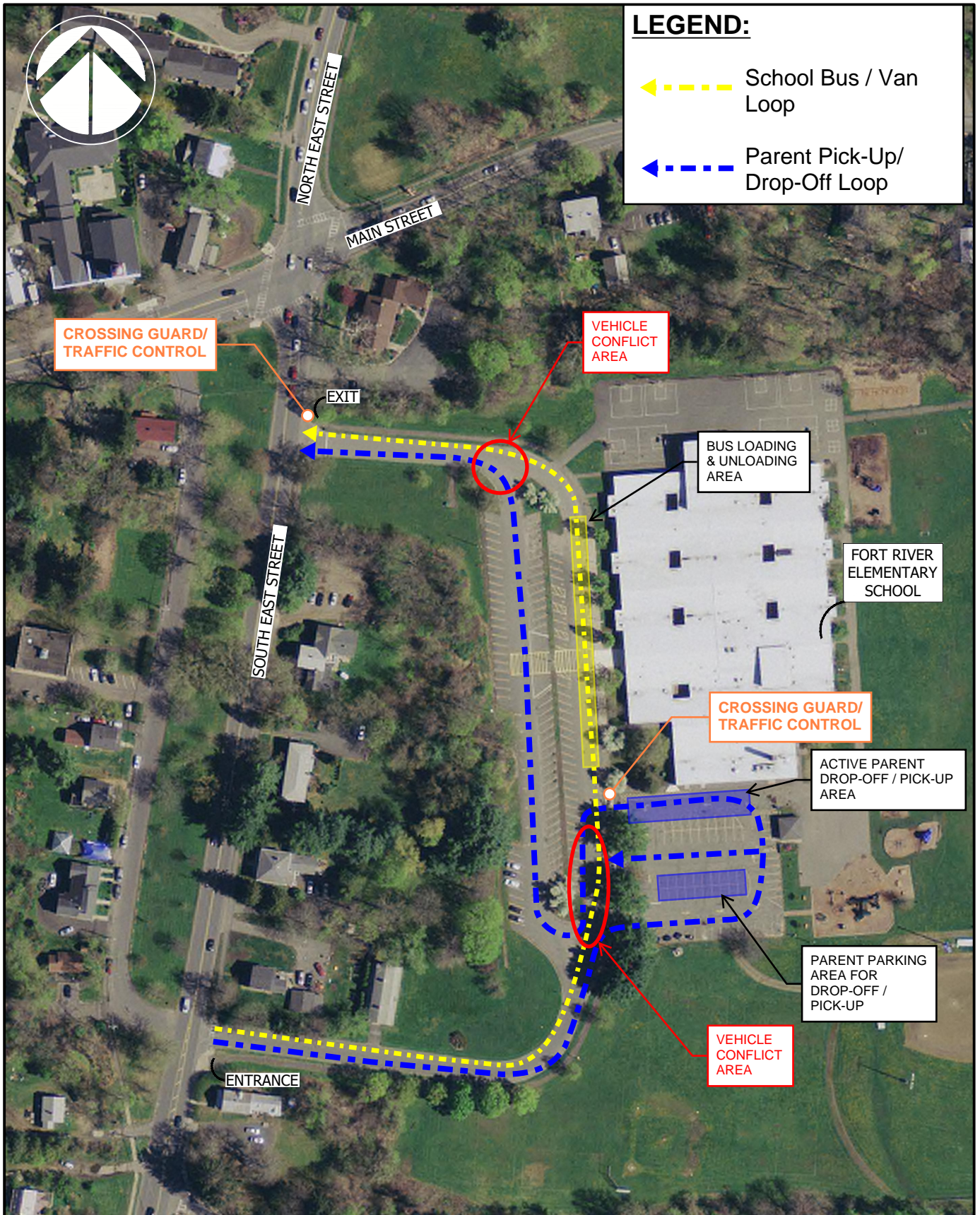
The existing Fort River Elementary School, located at 70 South East Street, is situated on the east side of South East Street between the signalized intersections of South East Street/Main Street and South East Street/College Street. Fort River Elementary currently has an enrollment of 351 students and approximately 90 faculty/staff members. Access to/from the site is provided via two driveways on South East Street. Circulation on the site generally operates in a one-way counterclockwise pattern with the southern driveway operating as entry-only and the northern driveway operating as exit-only. The southern site driveway is located directly opposite Watson Farms, forming a four-way intersection. The north driveway intersects South East Street approximately 200' south of the Main Street signalized intersection. The site contains two parking lots, one located west of the school building, and one located south of the school building. There is a combined total of 136 marked parking spaces between the two lots.

Arrival and Dismissal Operations

A review of the existing traffic conditions at and around the school were completed through field observations conducted during school arrival and dismissal periods. Parking occupancy was also recorded at the two school parking lots. All observations at the Fort River Elementary School were conducted on Wednesday, February 2, 2022, during typical school operations. The following describes the traffic operations observed at the school with supplement photos providing additional details. Additionally, **Figure 2** graphically displays the arrival and dismissal operations of the school.

During the morning arrival period, traffic circulation on the site generally operates in a one-way, counterclockwise loop for school bus, van, parent, and faculty/staff operations. The bus/van drop-off is separated from the parent drop-off location. Buses and vans are directed towards the front of the school for drop-off (**Photo 14**) while parent drop-offs are directed towards the southern parking lot (**Photo 15**). Parents loop through the southern parking lot, dropping-off children along the south side of the building. Parents are also provided with an alternate drop-off method. A section of the southern parking is dedicated to parents who prefer to park and walk their child to the building. This operation appeared to occur more frequently with younger children as they generally require a longer and more involved drop-off process. Students then enter the building through entrances across the front of the building or progress into the building at the southeast corner.





PROJECT NO. 21245.00

DATE: FEBRUARY 2022



FIGURE 2
CIRCULATION MAP
FORT RIVER ELEMENTARY SCHOOL
AMHERST, MASSACHUSETTS



Photo 14: Signage placed to indicate only buses have access to the front of the building during arrival and dismissal.



Photo 15: Signage placed to indicate parent pick-up/drop-off circulation loop.



Photo 16: Active parent drop-off. The red SUV about to enter the southern parking lot, the silver sedan has just exited the southern parking lot, and the black SUV is performed the U-turn to advance to the exit driveway.



Photo 17: Signage to indicate grade split for parent pick-up, only present in the afternoon.



After parents drop-off their child, they continue along the south side of the building to exit the southern parking lot. As the parent driven vehicle reaches the north/south drive aisle at the front of the building, they are controlled by a crossing guard. The crossing guard stops the exiting vehicle to ensure no buses are approaching the front of the school from the site entrance driveway. Once directed by the crossing guard, the vehicle makes a left-turn from the southern lot, followed by an immediate U-turn to the right, heading northbound in the western parking aisle to proceed to the site exit driveway. While this operation is fairly effective, it can be difficult for the crossing guard to properly control when parent vehicles are simultaneously exiting the southern parking lot from both the active drop-off area and the parent parking area as the two driveways are separate. **Photo 16** captures the morning parent drop-off pattern in this area of the site.

As parent traffic and bus/van traffic proceed to the northern site driveway to exit, there is a point at the northern end where the two traffic loops intersect. There is no existing internal signage to indicate which drive aisle approach has the right-of-way. Despite this conflict point being noted from a traffic control standpoint, no issues presented themselves during the field observations.

During the morning dismissal period, operations at the northern site driveway and the signalized intersection of South East Street and Main Street were observed to determine if vehicle queues from the signal impacted operations at the site driveway. The southern leg of the intersection (South East Street) contains two approach lanes, one dedicated to left turns and one dedicated to right-turn and thru movements. The longest queue observed during the morning arrival was 10 vehicles in the right and thru lanes, and seven (7) cars in the left lane. A queue of this length just reached the school exit driveway. During the afternoon, the queue at the signal was typically 5 vehicles in length and had little impact on the school exit driveway operations. Buses exiting the site onto South East Street were split approximately 50% heading northbound and 50% heading southbound.

The afternoon dismissal procedure operates in a similar pattern to the morning arrival procedure. The one difference in operations occurs at the parent pick-up area. During the afternoon dismissal period, two parent pick-up lanes form in the south parking lot, operating side-by-side through the loop. The two lanes are divided by grade with kindergarten and Grade 1 in the right lane and Grades 2-6 in the left-lane (**Photo 17**). This allowed the younger students, who generally require more loading time and assistance, to load separately without impacting parents picking-up older students. Parents are also allowed to park and walk to meet their child, similar to the morning operation.



Additional Observations

Several additional observations regarding traffic circulation and safety were noted by Pare during the field review and include the following:

- At no time during the arrival or dismissal periods did the parent vehicle queue exceed the limits of the southern parking lot. The southern parking lot provided ample space for the parent drop-off and pick-up operations.
- Flashing school speed limits signs were observed on South East Street, however, they were not functioning. The signs (**Photo 18**) appeared to be fairly new equipment with solar power systems. The crossing guard noted to Pare that they were installed in Summer 2021 but he had yet to see them functioning.
- School zone related signage in the area does not meet the standards as included in the Massachusetts amendments to the MUTCD. Some signage in the area is out of conformance (**Photo 19**) while some standard signage is lacking.
- Pare noted that the vehicle queue at the intersection of South East Street and Main Street occasionally reached lengths that impacted operations at the site exit driveway during the morning arrival period. In the event that the new elementary school be constructed on this site, resulting in more students than currently exist, traffic at the signalized intersection and driveway would increase. This would likely result in greater conflict between the school exit driveway and the queue formed at the adjacent signalized intersection. (**Photo 20**)

Several students were observed walking to/from school, however, no students were observed biking. This could be attributed to the time of year as students may be more inclined to bike during warmer months. (**Photo 21**)





Photo 18: Flashing school speed signs on South East Street are not functioning.



Photo 19: School zone signage along South East Street does not meet MUTCD standards.



Photo 20: Approximately 200' separate the site exit driveway from the South East Street/Main Street intersection. Greater traffic volumes in the area could result in the queue from the signal extending beyond the driveway more frequently.



Photo 21: A bike rack is located on the site but was not used.

Wildwood Elementary School

The existing Wildwood Elementary School, located at 71 Strong Street, is located on the south side of Strong Street approximately 700 feet east of the Strong Street/East Pleasant Street intersection. Wildwood Elementary currently has an enrollment of 344 students and approximately 95 faculty/staff members. A single, two-way driveway from Strong Street provides the only access to/from the site. This driveway also provides access to/from the Amherst Community Childcare Head Start daycare facility, located southwest of the Wildwood Elementary School. One parking lot is located on the north side of the school building, situated between Strong Street and the front of the building. A second parking lot is located on the west side of the building. The site contains a combined total of 105 marked parking spaces between the two lots.

Arrival and Dismissal Operations

Review of the existing traffic conditions at and around the school were completed through observations conducted during school arrival and dismissal periods. Parking occupancy was also recorded for the two parking lots for the school. All observations at Wildwood Elementary School were conducted on Thursday, February 10, 2022, during typical school operations. The following describes the traffic operations observed at the school with supplement photos providing additional details. Additionally, **Figure 3** graphically displays the arrival and dismissal operations of the school.

The traffic circulation pattern at the school during arrival and dismissal periods separates school buses/vans and parent traffic. As vehicles arrive from Strong Street, they separate into two loops, one for school buses and vans, and one for parents. Buses and vans are directed towards the front of the school (**Photo 22**). After loading/unloading, buses/vans use the parking lot drive aisles to loop back to the main site driveway and exit to Strong Street. Buses and vans load/unload at separate areas at the front of the building. Bus activities occur along the eastern portion of the front of the building while van operations occur towards the western end of the building.

Parent traffic is directed towards the western parking lot, forming two loops around the outside parking lot drive aisle. Student loading and unloading occurs along the west side of the building. The outer loop, used by parents of kindergarten students, loads/unloads at the southwest corner of the building while the inner loop, used by parents of older children, loads/unloads at the northwest corner of the building. The two traffic loops are separated by temporary barricades across the west side of the building. The barricades channel students and vehicles, providing a clear refuge area for student loading/unloading operations. Additionally, the barricades force students walking to/from the outer loop to a single crossing point crossing the inner loop. School staff actively manages parent traffic, serves as crossing guards, and guides students safely between building and the loading zone. (**Photo 23**).

During the morning arrival period and afternoon dismissal periods, Pare reviewed vehicle queueing that formed at the Strong Street intersection with East Pleasant Street and the site driveway intersection with Strong Street. The longest queue during the morning arrival period was observed at the Strong Street intersection with East Pleasant Street where the queue of 11 vehicles was observed at the Strong Street approach. During the afternoon, a maximum queue of 11 vehicles was observed exiting the school driveway.



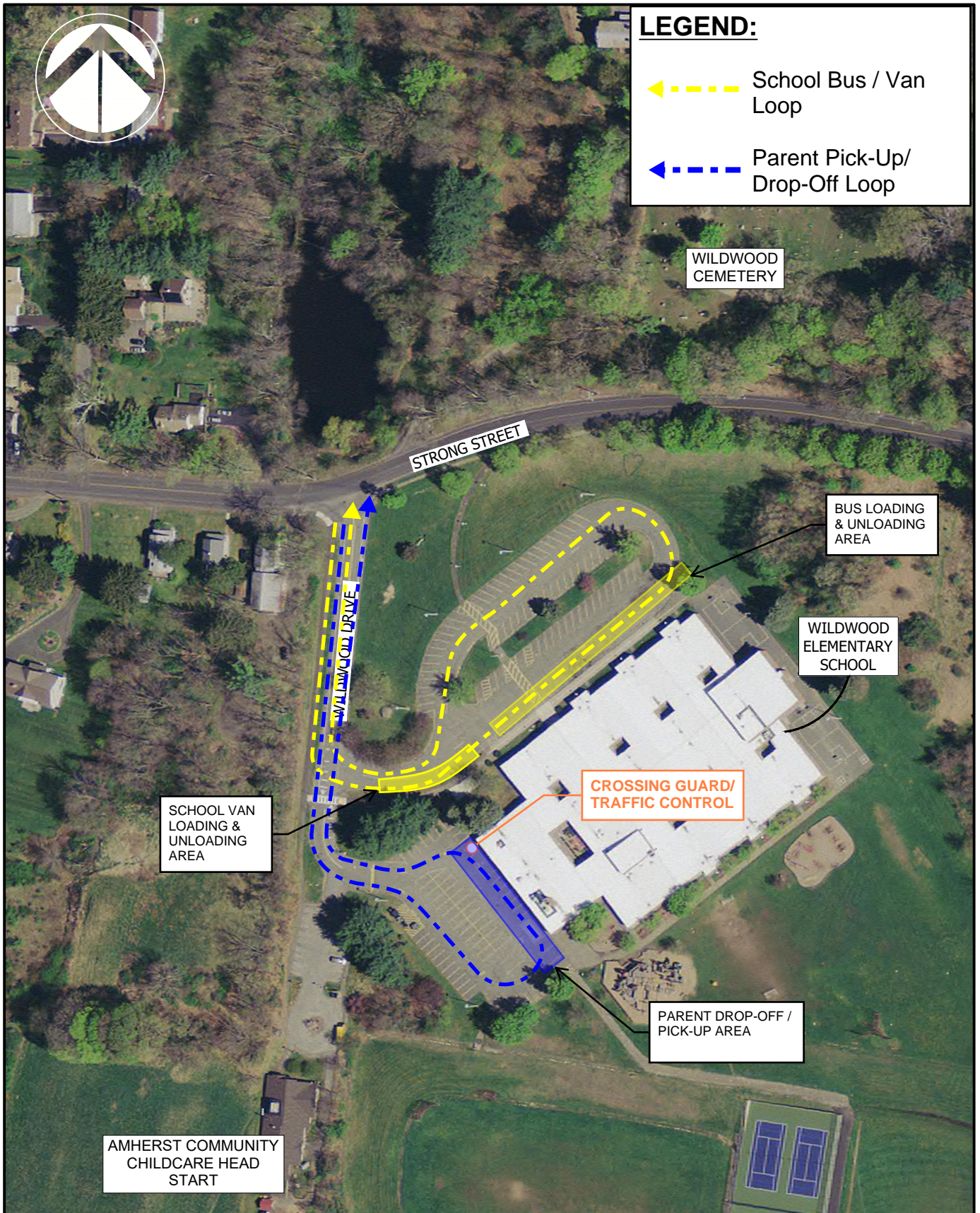




Photo 22: Wide view of bus loop start at the front of the school (right) and looping around towards the left side of the photo



Photo 23: Parent drop-off/pick up loops at the west side of the building. Grade 1-6 parent use the space left of the barricades, kindergarten parents use the right drive aisle and the protected space between the barricades is used as a walkway for Grade 1-6 students.



Photo 24: Crosswalk to assist pedestrians at the southern end of the school driveway.



Photo 25: Despite other available spots present, image displays drivers parking wherever available in the morning



Several students were observed walking to/from school. Sidewalks are located along the south side of Strong Street and the west side of the site driveway. A raised crosswalk connecting the west side of the site driveway to the front of the school provides both a traffic calming feature on the site and pedestrian safety feature (**Photo 24**).

Additional Observations

Several additional observations regarding traffic circulation and safety were noted by Pare during the field review and include the following:

- At no time during the arrival or dismissal period did the parent vehicle queue exceed the limits of the western parking lot. The western parking lot provided ample space for the parent drop-off and pick-up operations.
- Flashing school speed limits signs were observed on east of the school on Strong Street and on East Pleasant Street both north and south of Strong Street.
- School zone related signage in the area does not meet the standards as included in the Massachusetts amendments to the MUTCD. Some signage in the area is out of conformance while some standard signage is lacking.

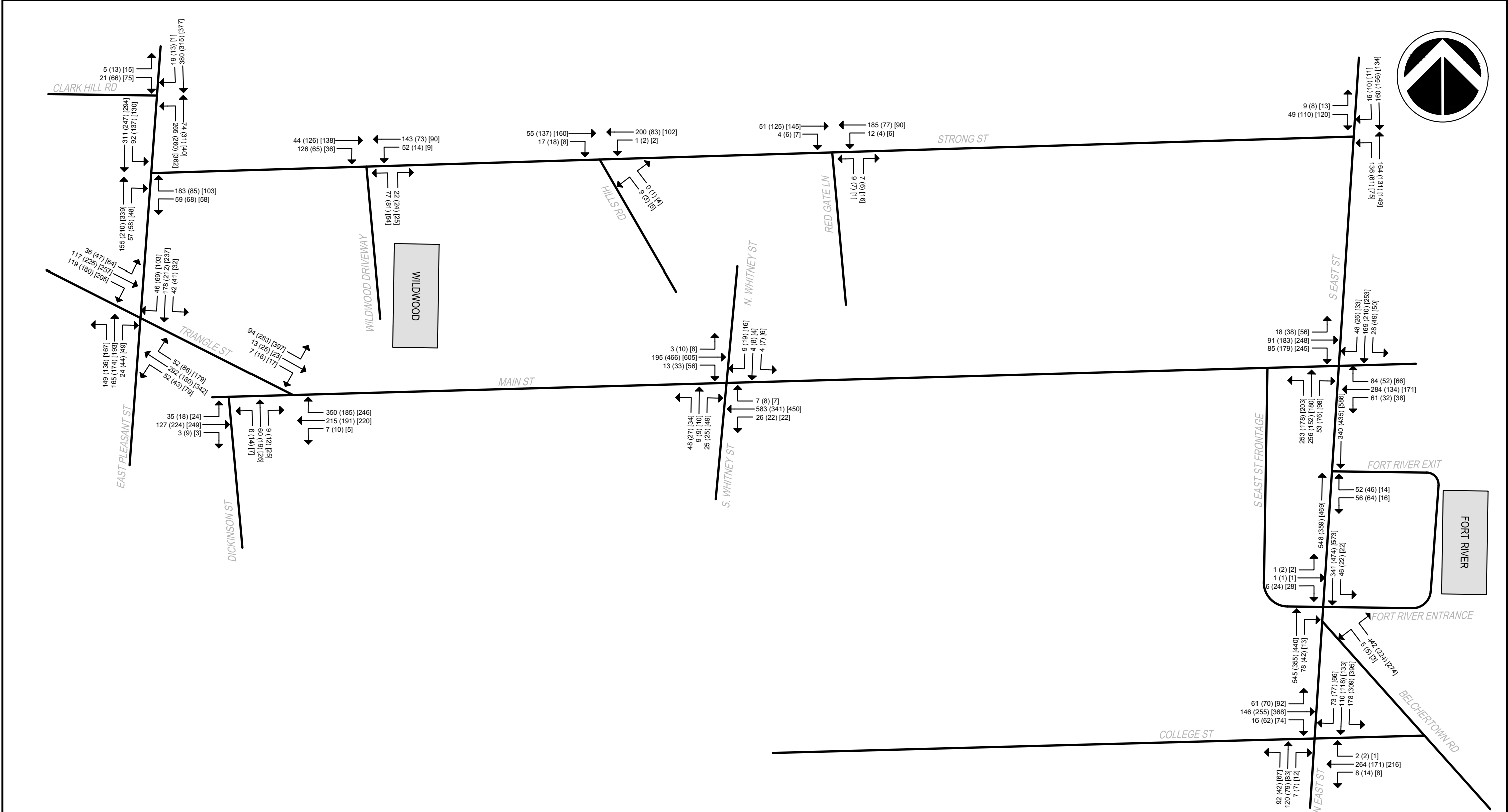


EXISTING TRAFFIC VOLUMES

Manual turning movement counts (TMCs) were conducted on April 13, 2022 during the hours of 7:00 a.m. to 9:00 a.m. and 2:00 p.m. to 6:00 p.m. for the study area intersection. These time periods were selected as they represent the peak traffic time periods for the schools and typical peak periods for the adjacent roadway network. A 48-hour automatic traffic recorded (ATR) count was also performed on Strong Street near the Wildwood Elementary School driveway and on South East Street between the two Fort River Elementary School driveways.

Copies of all count data, including pedestrians, are provided in Appendix A. Traffic volumes for the morning peak hour, school dismissal hour and afternoon peak hour are shown in Figure 4.





AM VOLUMES (DISMISSAL VOLUMES) [PM VOLUMES]



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Figure 4
Existing (2029) Traffic Volumes
Weekday AM, School Dismissal, and PM Peak

Amherst, MA

SAFETY ANALYSIS

Crash Data

Crash data was retrieved from the Massachusetts Department of Transportation Crash Portal for the most recent 5-year period prior to COVID, from January 1, 2015 through December 31, 2019, for the study area. The table below provides a breakdown of the crashes based on type and severity. The complete crash data summary is provided in Appendix B.

Table 1: Crash Data Summary

Roadway/ Intersection	Total Crashes	Crash Severity			Crash Type				
		PDO	Non-Fatal Injuries	Fatalities	Rear End	Sideswipe	Head On	Single Vehicle	Angle
East Pleasant Street at Clark Hill Road	10	8	2	0	4	0	1	1	4
East Pleasant Street at Strong Street	11	9	2	0	7	0	0	2	2
East Pleasant Street at Wildwood Elementary School	1	1	0	0	0	0	0	1	0
North East Street at Strong Street	10	7	3	0	2	1	1	3	3
East Pleasant Street at Triangle Street	26	20	6	0	8	5	2	2	9
Main Street at Triangle Street and Dickinson Street	27	21	6	0	14	5	0	7	1
Main Street at North Whitney Street	10	6	4	0	2	0	0	2	6
Main Street at North East Street and South East Street	11	11	0	0	3	2	2	0	4
South East Street at Watson Farms and Fort River Elementary School Entrance	6	6	0	0	0	0	0	1	5
South East Street at College Street and Belchertown Road	23	18	5	0	12	3	2	1	5

PDO – Property Damage Only

Between the years of 2015 and 2019, a total of 135 crashes occurred within the study area. These crashes were relatively well distributed, however, approximately 56% of crashes were located at



the intersections of East Pleasant Street at Triangle Street, Main Street at Triangle Street and Dickinson Street, and South East Street at College Street and Belchertown Road. These intersections have the highest volume within the study area, so the higher frequency of crashes is not unexpected.

Crash rates at the intersections with the highest frequency of crashes were calculated as a means to normalize the number of crashes relative to the volume of traffic at the intersections and were then compared to the MassDOT Intersection and Roadway Crash Data Rates, which will define the average crash rates per intersection type depending on the MassDOT district. For District 2, the average crash rate for unsignalized intersections is 0.62, while the average rate for signalized intersections is 0.89. Table 2 below shows the calculated crash rates for the three intersections of interest.

Table 2: Crash Rate Summary

Intersection:	Type:	Crash Rate:
East Pleasant Street at Triangle Street	Unsignalized	0.67
Main Street at Triangle Street and Dickinson Street	Signalized	1.07
South East Street at College Street and Belchertown Road	Signalized	0.63

As shown above, the intersection of East Pleasant Street at Triangle Street and the intersection of Main Street at Triangle Street and Dickinson Street have slightly elevated crash rates compared to the average, while the intersection of South East Street at College Street and Belchertown Road has a slightly lower crash rate than the average. The elevated crash rate at the intersection of Main Street at Triangle Street and Dickinson Street could be contributed to the offset configuration of the intersection. From a safety standpoint, intersections with this design tend to have a higher crash rate than normal due to the offset approaches having a skewed alignment. The other two intersections are only slightly outside the range of the average rate and would still be considered close enough to the average to not raise concerns.

Sight Distance Analysis

Vehicle speeds along South East Street and Strong Street near the existing sites were captured on Wednesday, April 13, 2022 by the use of Automated Traffic Recorders (ATR's). A summary of the speed data results is shown in Table 3 below. The complete data log can be found in Appendix C. The most notable metric presented in the table is the 85th percentile speed, which is typically considered the design speed of the roadway and is used for sight distance analysis.

Table 3: Speed Study Summary

	Posted Speed	True Median (50 th Percentile)	85 th Percentile	10 MPH Pace
South East Street				
Northbound	30	29	34	26-35
Southbound	30	30	34	26-35
Strong Street				
Eastbound	30	31	34	26-35
Westbound	30	35	40	31-40



Concerns have been raised relative to vehicles driving at higher speed than desired along Strong Street and mitigation options that would not hinder the operations at the school will be considered. In conjunction with the speed data, the sight lines for the existing site driveways on Strong Street (for Wildwood Elementary School) and South East Street (for Fort River Elementary School) were investigated. From the site visit, neither existing site driveway displayed any clearly visible issues in terms of sight distance, with the exception of some overgrown vegetation that is anticipated to be cleared during construction. Per conversations with the client, a more thorough investigation of sight distance along Strong Street was investigated as there is a potential to add a driveway to the east of the existing site driveway.

As a site layout alternative, an additional driveway to the east of the existing Wildwood Elementary School driveway is under consideration. The placement of the driveway relative to the adequacy of sight distance was reviewed. Sight lines along Strong Street are impeded by vertical and horizontal curvature when looking to the east from the site. This sight distance limitation becomes an issue approximately 450 feet east of the existing driveway, where the sight distance will be obstructed to approximately 270 feet. Photos 25 and 26 show this limitation.



Photo 25: Sight Line Looking Right (East)

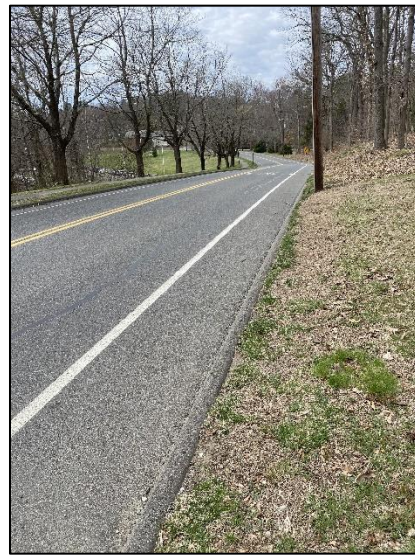


Photo 26: Driver's View Traveling Westbound

Additionally, for the build scenario where the combined school is placed at the current Fort River Elementary School Site, it is anticipated that the southern driveway (that is currently used strictly as an entrance), will be converted to allow for westbound left turns out of the site. These driveways are approximately 700 feet apart, but have no differences in terms of physical and geometric obstructions. Due to this, for purposes of sight distance analysis, these driveways will be treated as one.

According to the latest edition of the American Association of State Highway and Transportation Officials (AASHTO) publication A Policy on the Geometric Design of Highways and Streets, the minimum safe stopping sight distances (SSD) for 35 miles per hour is 285 feet, and the minimum safe stopping distance for 40 miles per hour is 305 feet. The required intersection sight distance to avoid a collision is equal to the stopping sight distance. In addition, AASHTO gives guidance for a more desirable intersection sight distance (ISD) for this speed, which will not only avoid collisions, but maintain vehicular flow of at least 70 percent of the original operating speed.



Meeting the desirable criteria for sight distance is more applicable to heavily traveled, higher-speed facilities such as arterial streets, where maintaining traffic flow is important. A summary of the sight distance available for the driveway can be seen in the following table.

Table 4: Sight Distance Summary

		Required SSD (ft)	Measured SSD (ft)	Desirable ISD (ft)
Fort River Elementary School Exit	To the North (Right)	285	>500	390
	To the South (Left)	285	>500	335
Wildwood Elementary School Driveway	To the East (Right)	305	>500	445
	To the West (Left)	305	>500	385

SSD = Stopping Sight Distance; ISD = Intersection Sight Distance

As indicated above, the sight distance from the sight driveways meets the minimum criteria to avoid collisions, as well as meeting the desirable ISD requirements, assisting in functional efficiency for the intersection. Therefore, based on the sight distance analysis, there are no safety concerns anticipated at the site exit. For the potential build of an additional driveway along Strong Street for Wildwood Elementary, sight distance requirements would only be met at a distance less than 450 feet from the current driveway.

NO-BUILD CONDITIONS

Future no-build traffic volumes are determined by projecting the existing traffic volumes based on a determined annual growth rate and including known potential developments within the study area. The Town of Amherst Planning Department was contacted to determine if there are currently any developments proposed whose trip generation information should be included in the study. Several residential developments were noted including the following:

- 57 Dwelling Units at 133 and 143 South East Street
- 70 Dwelling Units at 44 Belchertown Road and East Street School
- 28 Affordable Housing Dwelling Units on Belchertown Road
- 65 Apartment Style-Dormitory Units on Olympia Drive
- 90 Dwelling Units at 11 and 13 East Pleasant Street

It was noted by the Department that only one of these developments had a traffic study submitted, which was the 57 dwelling units on South East Street. Due to the fact that traffic studies for these developments have yet to be provided to the Town, the trips generated by these developments were not included in the background growth for future conditions assessments. It should also be noted that residential developments generate relatively low volumes of trips throughout the day and during peak times. For the purposes of this study, Pare has considered that the traffic generated by these residential studies would be captured by the projected traffic increase due to the predicted overall background growth rate.

To account for background growth along the roadways within the vicinity of the project site, the existing traffic volumes were projected over a seven-year horizon from 2022 to 2029. Recent census



data was reviewed to determine the appropriate growth rate. The census data showed a population increase of approximately 0.38% per year from 2010 to 2020 for the town of Amherst. To provide a conservative analysis of the project area, a growth rate of 0.5 % per year was used for the seven-year projection.

A copy of the available census data is provided in Appendix D. Figure 5 provides the 2029 no-build volumes for the morning and afternoon peak hours.

BUILD CONDITIONS

The future 2029 build condition represents the future 2029 no-build condition plus the proposed trips due to the new traffic from the school. As the intent is to analyze each site for its adequacy to accommodate the new traffic, two future build scenarios are considered. The first involves closing the Fort River Elementary School and moving the students to Wildwood Elementary School, while the second involves closing the Wildwood Elementary School and moving the students to Fort River Elementary. Both schools currently serve kindergarten through Grade 6, but would remove the sixth grade for the newly constructed school. Enrollment data provided to Pare can be found in Appendix E.

Trip Generation

The expected trips for the proposed elementary school were determined based on count data provided from the TMC's on April 13, 2022 and grade distribution enrollment data. For each scenario analyzed, Pare removed a respective amount of trips entering and exiting the school proportionate to the removal of the sixth grade. This involved removing 17% of school related trips at Wildwood Elementary school and removing 13% of school related trips at Fort River Elementary School. The first build scenario involved adding the remaining trips from Fort River Elementary School to the Wildwood Elementary School site and the second build scenario required the opposite. The new trips added are shown below in Table 5.

Table 5: Trip Generation

		Number of New Trips	
		AM Peak	School Dismissal
Scenario 1: Build at Wildwood Elementary School	Entering	113	60
	Exiting	98	101
	Total	211	161
Scenario 2: Build at Fort River Elementary School	Entering	154	70
	Exiting	87	91
	Total	241	161

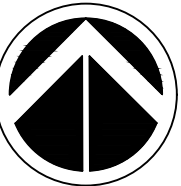
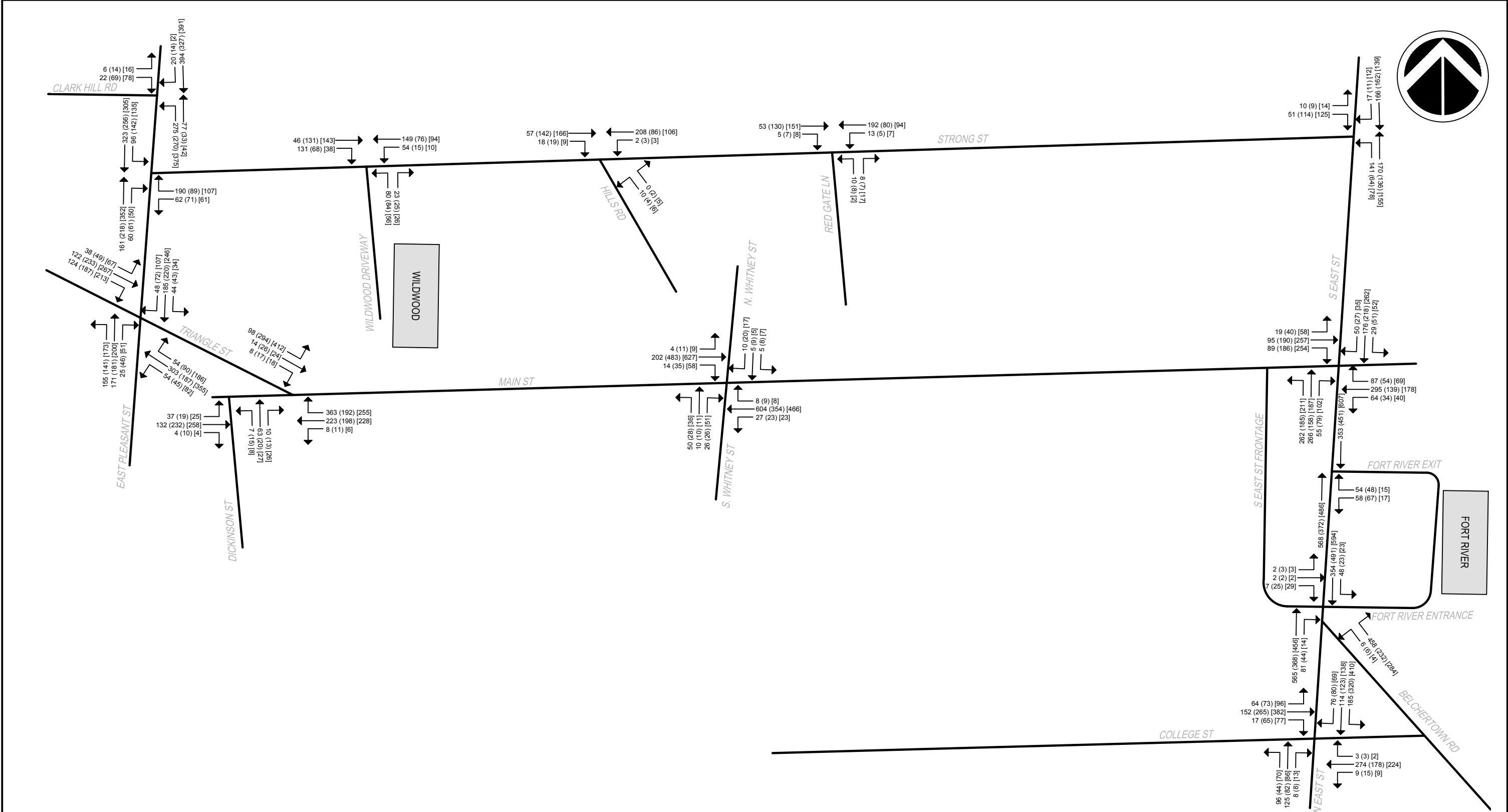
In Table 5, the AM Peak represents the morning peak hour when traffic is at its heaviest and the school will see most of its drop offs. The School Dismissal represents expected trips added to the network once school ends during the afternoon.



Trip Distribution

For determining trip distribution for the network, Pare began by referencing the most recent school district map for the elementary schools in Amherst. To best model trips arriving in the morning and leaving in the afternoon, Pare assumed these trips would most likely be to and from the students' homes. Using the district map, trips arriving to Wildwood Elementary School that were initially in the district of Fort River Elementary School were determined based on the housing density present in the district nearest study area intersections, while the opposite was applied for those arriving at Wildwood Elementary School. However, as the locations or destinations of parents/guardians after dropping students off or picking them up is unknown, vehicles exiting in the morning and arriving in the afternoon were distributed based on the existing traffic distribution. Housing distribution relative to the University of Massachusetts Amherst was omitted for distribution purposes. As the intended use of the abandoned school is not yet determined and to provide a more conservative analysis, no traffic was removed from the existing network for either scenario. Edited school district maps for each build scenario are shown in Figures 6 and 7. Site generated traffic volumes for each scenario are shown in Figures 8 and 9, and the future (2029) build volumes for each scenario are shown in Figures 10 and 11. The provided Amherst Elementary School District Map provided to Pare can be found in Appendix E.





AM VOLUMES (DISMISSAL VOLUMES) [PM VOLUMES]



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


Figure 5
No Build (2029) Traffic Volumes
Weekday AM, School Dismissal, and PM Peak

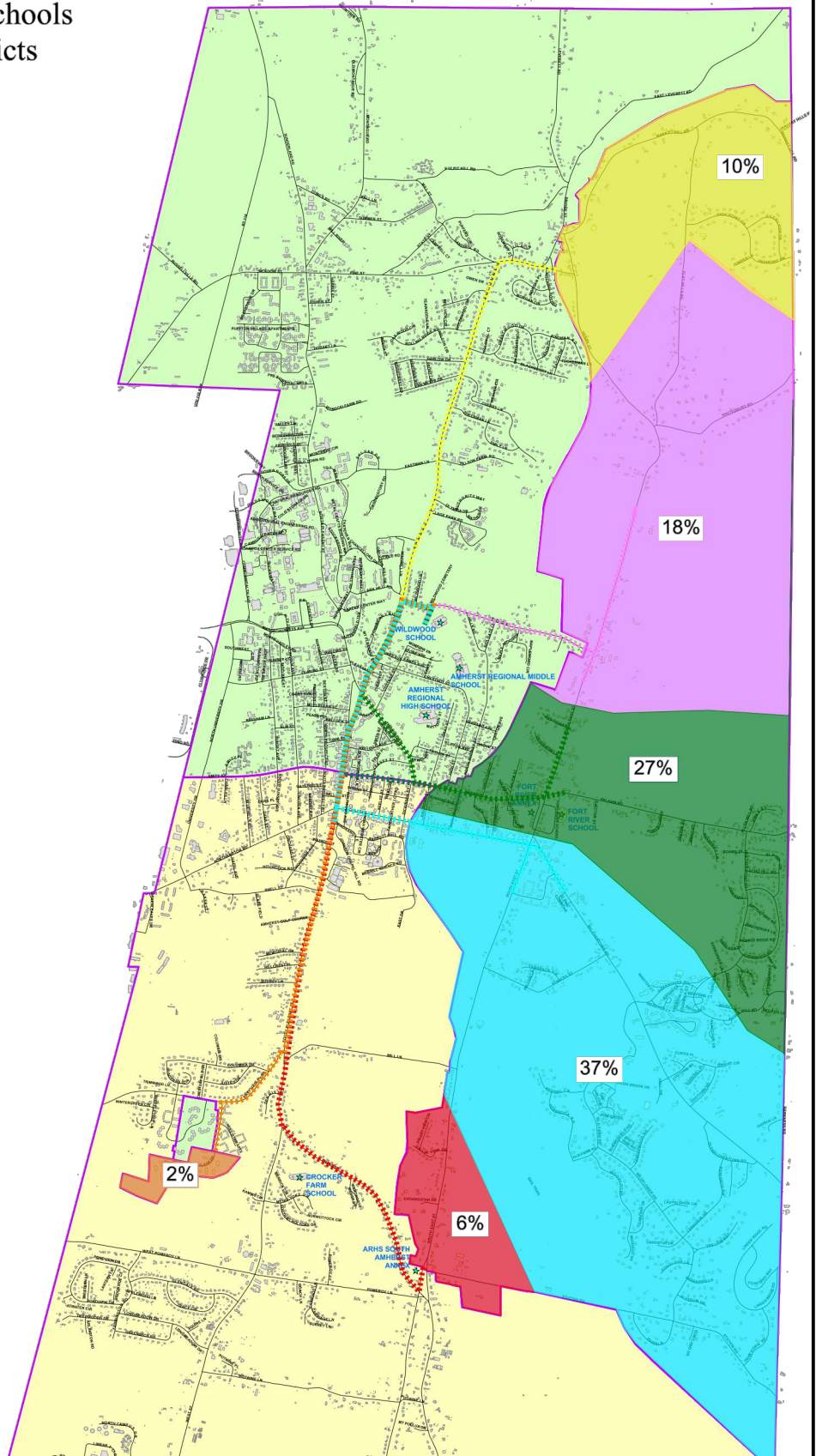
Amherst, MA

Amherst Regional Public Schools Elementary School Districts



gis.amherstma.gov

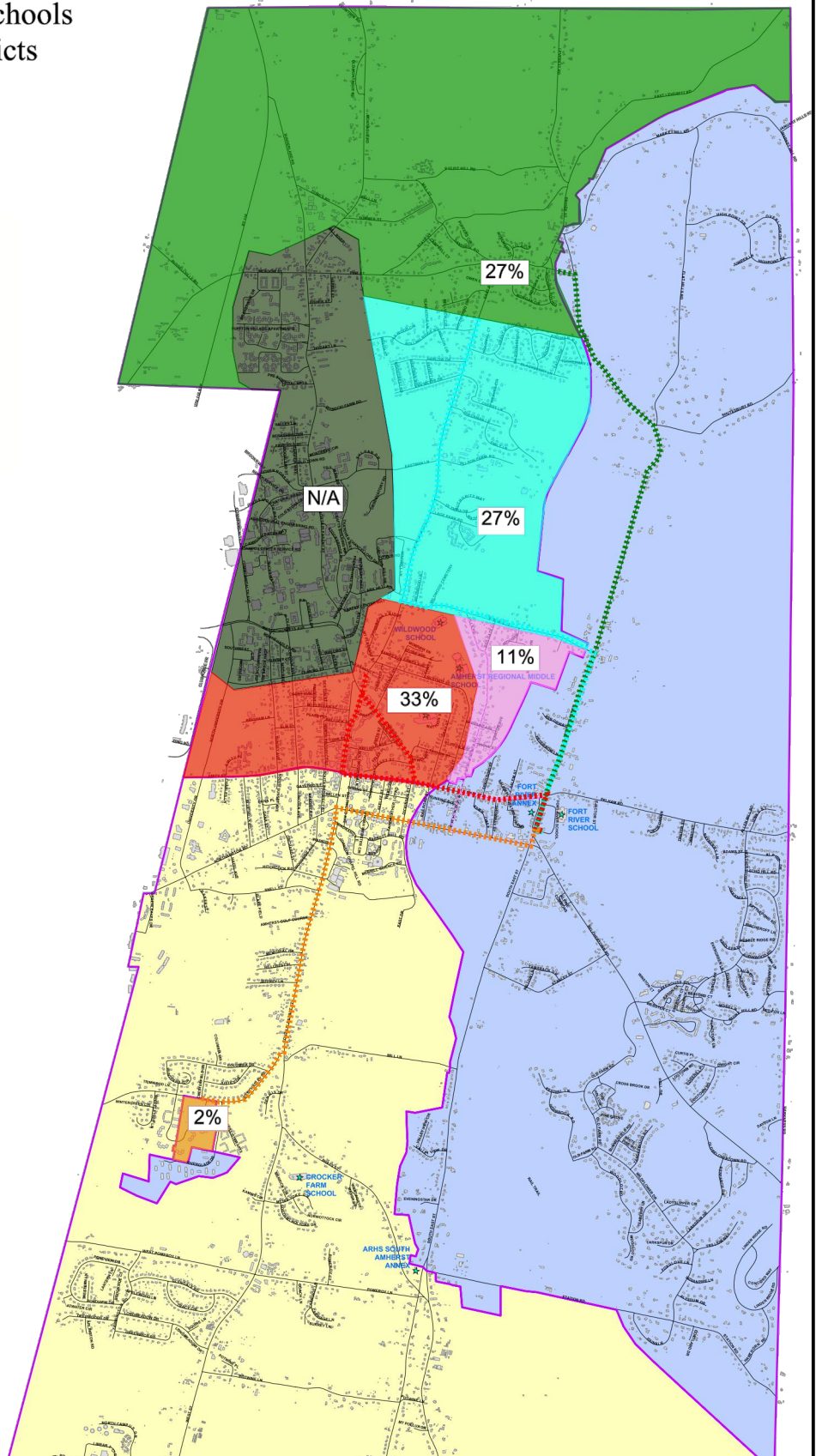
- ★ Schools
- School Districts**
-  Crocker Farm
-  Fort River
-  Wildwood



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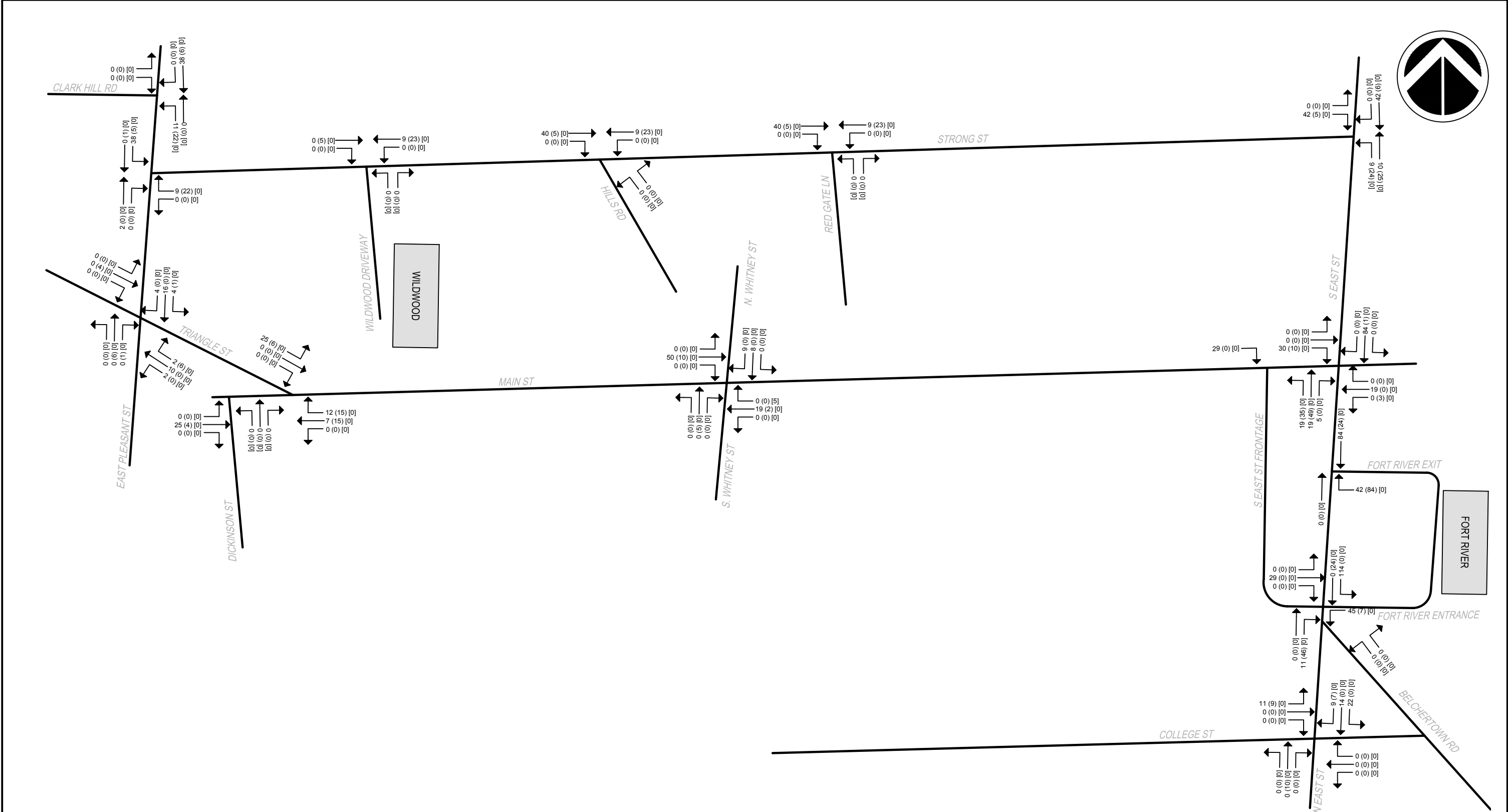
FIGURE 6
SCENARIO 1 TRIPS VIA HOUSING DISTRIBUTION
AMHERST ELEMENTARY SCHOOL
AMHERST, MASSACHUSETTS



DATE: MAY 2022



AMHERST ELEMENTARY SCHOOL
AMHERST, MASSACHUSETTS



AM VOLUMES (DISMISSAL VOLUMES) [PM VOLUMES]

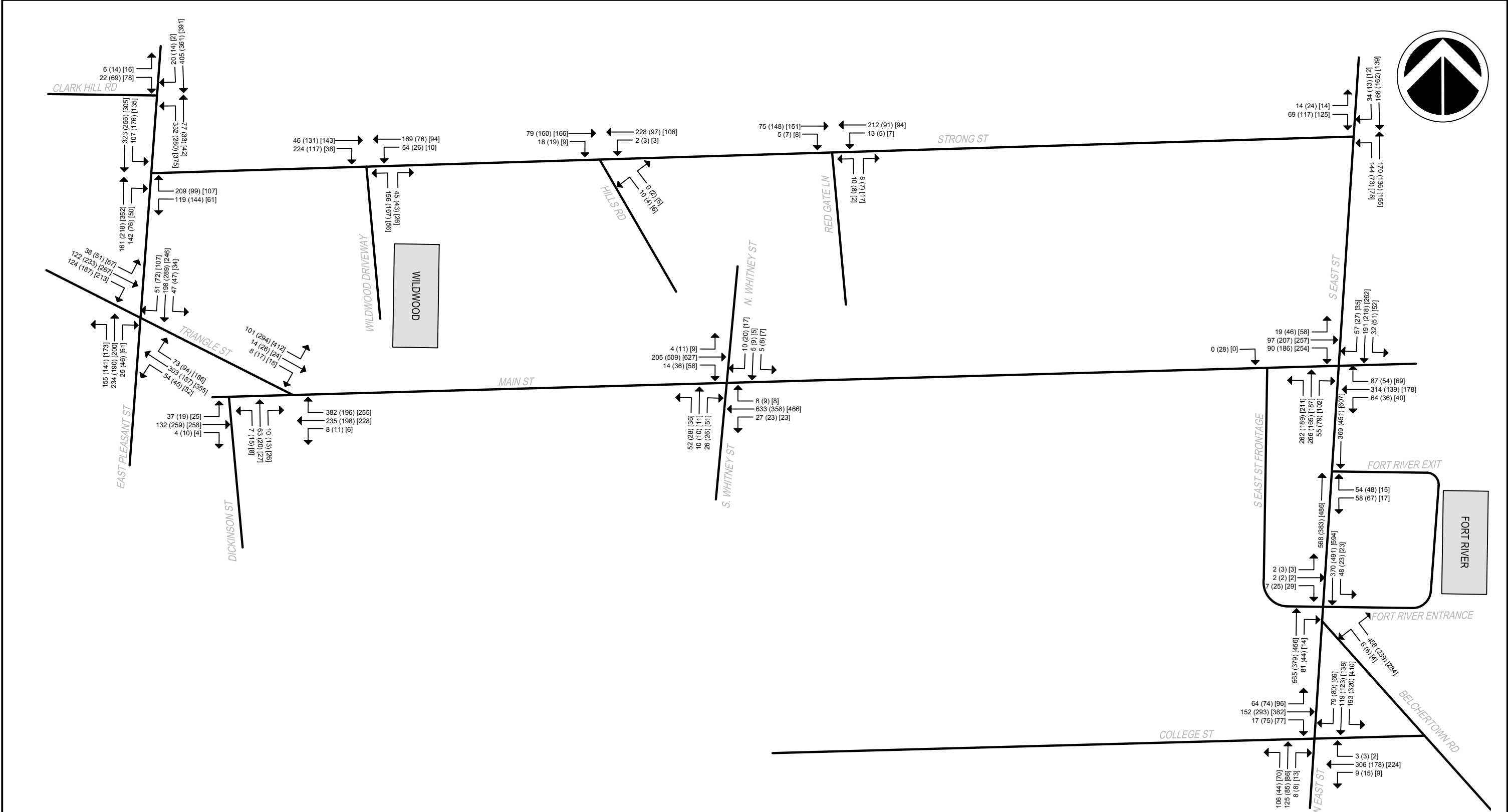


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Figure 9
Scenario 2 Site Generated Trips
Weekday AM, School Dismissal, and PM Peak

Amherst, MA



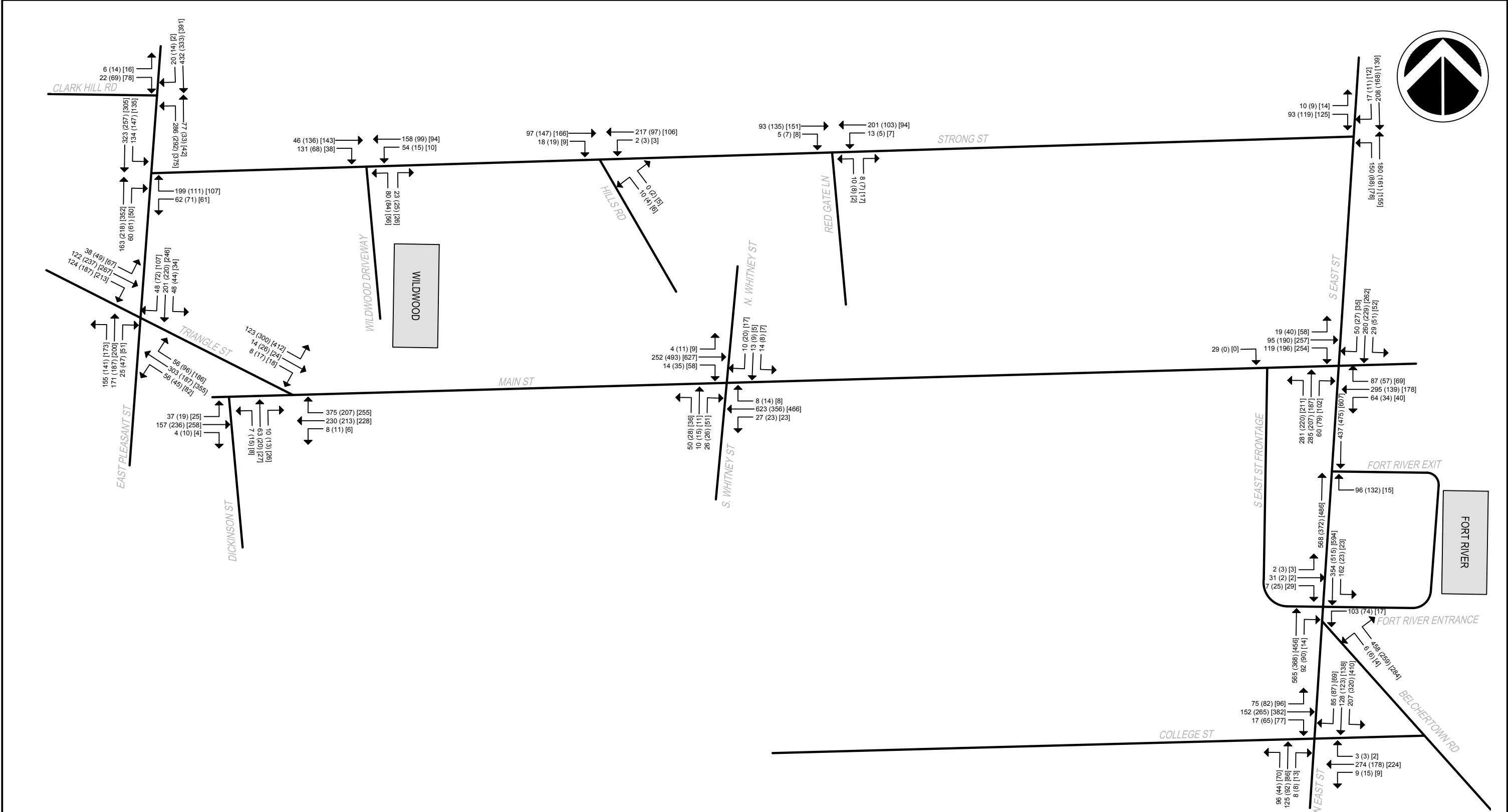
AM VOLUMES (DISMISSAL VOLUMES) [PM VOLUMES]



PROJECT NO. 21245.00

DATE: MAY 2022

Figure 10
Future Build Scenario 1 Volumes
Weekday AM, School Dismissal, and PM Peak
Amherst, MA



AM VOLUMES (DISMISSAL VOLUMES) [PM VOLUMES]



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Figure 11

Future Build Scenario 2 Volumes

Weekday AM, School Dismissal, and PM Peak

Amherst, MA

CAPACITY ANALYSES

Capacity analyses were completed for all study area intersections for existing, future (2029) no-build, and future (2029) build conditions. Capacity analyses characterize intersections based on their level of service (LOS). LOS is a quality measure describing operational conditions within a traffic stream, generally in terms of service measures such as speed, travel times, traffic interruptions, etc. Six LOS values, from A to F, are defined for each type of facility, with A representing the best operating conditions and F representing the worst operating conditions. The LOS criteria for signalized and unsignalized intersections is provided in Table 6 below. Tables 7, 8, and 9 summarize the capacity analysis results for the morning, school dismissal and afternoon peak hours, respectively.

Table 6: LOS Criteria for Signalized and Unsignalized Intersections

LOS	Signalized Intersection	Unsignalized Intersection
	Delay Time (sec/veh)	Delay Time (sec/veh)
A	≤ 10	0-10
B	$> 10-20$	$> 10-15$
C	$> 20-35$	$> 15-25$
D	$> 35-55$	$> 25-35$
E	$> 55-80$	$> 35-50$
F	> 80	> 50

The methodology for the assessment of future traffic conditions is consistent with MassDOT's *Transportation Impact Assessment (TIA) Guidelines*. Details of the calculations performed under this methodology include the use of a peak hour factor (PHF) of 0.92 for all future scenarios. This is intended to ease some of the unpredictability of traffic patterns, particularly when accounting for various unknowns seven year into the future. On occasion, this can result in an improvement of LOS and a reduction in vehicle delay when comparing existing conditions to future no-build conditions. This anomaly can be found in several locations within this study and the tables below.

While it is important for the existing conditions of the intersection to be evaluated and included as part of this traffic study, the most valuable comparison of conditions is between the future no-build and future build conditions. This comparison isolates the review of conditions specifically to that produced by the school construction scenarios.



Table 7: Morning Peak Hour LOS Summary

Intersection	Movement		Existing (2022)		Future (2029) No-Build		Future (2029) Build at Wildwood Site		Future (2029) Build at Fort River Site	
			LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²
Main Street at North East Street and South East Street	NB	L	F (123.9)	#293	F (86.0)	#296	F (109.7)	#305	F (210.9)	#348
		T,R	C (28.4)	217	C (27.3)	225	C (27.5)	225	C (28.8)	245
		App	E (71.4)	-	D (53.7)	-	E (64.5)	-	F (110.5)	-
	SB	L,T,R	C (28.1)	174	C (25.3)	179	C (27.5)	200	C (33.6)	#283
	EB	L,T	C (20.0)	78	C (20.3)	82	C (20.3)	84	C (20.3)	82
		R	A (5.4)	29	A (5.3)	30	A (5.3)	31	A (5.0)	35
		App	B (13.7)	-	B (13.7)	-	B (13.7)	-	B (12.5)	-
	WB	L,T,R	D (48.5)	#378	D (48.6)	#392	D (52.4)	#415	D (48.6)	#392
	Intersection		D (49.7)	-	D (41.8)	-	D (47.2)	-	E (63.9)	-
Main Street at Triangle Street and Dickinson Street	NB	L,T,R	D (36.6)	94	D (40.4)	104	D (35.3)	93	C (31.8)	90
	SB	L,T,R	D (30.2)	123	D (47.4)	145	D (39.0)	139	C (34.6)	158
	EB	L,T,R	F (100.4)	#247	D (45.6)	201	D (46.3)	206	E (64.0)	#286
	WB	L,T	E (56.1)	268	D (41.0)	249	D (41.9)	267	D (46.9)	291
		R	B (17.2)	12	B (12.5)	93	A (4.3)	64	A (4.7)	72
		App	C (32.3)	-	C (23.6)	-	B (18.9)	-	C (21.1)	-
	Intersection		D (43.7)	-	C (31.9)	-	C (27.4)	-	C (32.0)	-
South East Street at College Street	NB	L	E (66.1)	156	E (59.3)	152	E (61.9)	171	E (62.8)	156
		T,R	E (63.3)	198	E (56.3)	194	E (59.5)	204	E (60.6)	201
		App	E (64.5)	-	E (57.6)	-	E (60.5)	-	E (61.5)	-
	SB	L	E (60.8)	273	D (53.6)	251	E (55.6)	275	E (55.1)	288
		T,R	D (49.0)	252	D (44.0)	234	D (47.4)	260	D (46.1)	271
		App	D (54.9)	-	D (48.7)	-	D (51.5)	-	D (50.5)	-
	EB	L	E (68.2)	112	E (60.6)	113	E (64.0)	117	E (63.9)	129
		T,R	C (34.8)	199	C (31.6)	205	C (31.4)	207	C (31.8)	207
		App	D (43.9)	-	D (39.6)	-	D (40.4)	-	D (41.7)	-
	WB	L	E (62.2)	26	E (55.7)	28	E (58.9)	30	E (58.1)	29
		T,R	E (57.1)	348	D (51.3)	352	D (52.8)	403	E (55.4)	361
		App	E (57.3)	-	D (51.4)	-	D (53.0)	-	E (55.5)	-
	Intersection		E (55.1)	-	D (49.3)	-	D (51.5)	-	D (52.0)	-



Amherst Elementary Schools TIA

Intersection	Movement	Existing (2022)		Future (2029) No-Build		Future (2029) Build at Wildwood Site		Future (2029) Build at Fort River Site	
		LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²
East Pleasant Street at Strong Street	NB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	SB	A (1.9)	8	A (1.8)	8	A (2.1)	8	A (2.4)	10
	WB	C (24.2)	115	C (16.4)	63	D (32.6)	160	C (18.4)	75
North East Street at Strong Street	NB	A (3.6)	10	A (3.6)	10	A (3.7)	10	A (3.7)	10
	SB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	EB	B (10.9)	10	B (10.8)	8	B (11.1)	13	B (11.1)	15
Main Street at South Whitney Street and North Whitney Street	NB	E (35.8)	58	C (24.2)	35	D (26.2)	40	D (28.8)	43
	SB	C (21.9)	8	C (18.4)	5	C (19.1)	8	C (24.3)	15
	EB	A (0.1)	0	A (0.2)	0	A (0.2)	0	A (0.1)	0
	WB	A (0.3)	3	A (0.3)	3	A (0.3)	3	A (0.3)	3
South East Street at South East Street Frontage and Fort River Entrance	NB	A (0.0)	0	A (0.0)	0	N/A	N/A	A (0.0)	0
	SB	A (1.1)	5	A (1.1)	5	N/A	N/A	A (3.2)	20
	EB	B (13.1)	3	B (13.6)	3	N/A	N/A	F (54.8)	40
	WB - L	N/A	N/A	N/A	N/A	N/A	N/A	F (473.5)	250
South East Street at Fort River Exit	NB	A (0.0)	0	A (0.0)	0	N/A	N/A	A (0.0)	0
	SB	A (0.0)	0	A (0.0)	0	N/A	N/A	A (0.0)	0
	WB	F (57.5)	180	C (21.8)	40	N/A	N/A	B (14.6)	20
Strong Street at Hills Road	NB	B (10.7)	3	B (10.3)	0	B (10.7)	3	B (10.7)	3
	EB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	WB	A (0.0)	0	A (0.1)	0	A (0.1)	0	A (0.1)	0
Strong Street at Red Gate Lane	NB	B (10.1)	3	A (9.7)	3	B (10.0)	3	B (10.0)	3
	EB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	WB	A (0.5)	0	A (0.5)	0	A (0.4)	0	A (0.5)	0



Amherst Elementary Schools TIA

Intersection	Movement	Existing (2022)		Future (2029) No-Build		Future (2029) Build at Wildwood Site		Future (2029) Build at Fort River Site	
		LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²
East Pleasant Street at Clark Hill Road	NB	A (1.9)	8	A (1.9)	5	A (1.6)	8	A (1.8)	8
	SB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	EB	C (15.0)	8	B (13.6)	5	B (14.1)	5	B (14.2)	5
South East Street at Belchertown Road	NB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	SB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	WB	C (20.3)	158	C (16.1)	108	C (16.1)	108	C (16.1)	108
Strong Street at Wildwood Driveway	NB	B (14.6)	40	B (12.3)	18	C (15.8)	48	N/A	N/A
	EB	A (0.0)	0	A (0.0)	0	A (0.0)	0	N/A	N/A
	WB	A (2.1)	3	A (2.1)	3	A (1.9)	3	N/A	N/A
East Pleasant Street at Triangle Street	NB	A (8.2)	50	A (7.7)	48	A (8.7)	64	A (7.7)	49
	SB	C (16.3)	92	B (10.2)	52	B (10.8)	58	B (11.0)	59
	EB	A (9.8)	64	A (7.4)	39	A (7.6)	40	A (7.7)	40
	WB	C (20.1)	195	B (10.7)	73	B (12.9)	93	B (11.1)	78
	Intersection	B (14.7)	-	A (9.1)	-	B (10.2)	-	A (9.5)	9.5

- 95th percentile volume exceeds capacity; queue may be longer

1. Delay shown in seconds per vehicle.

2. Queue Length shown in feet, assuming 25 feet per vehicle



Table 8: School Dismissal Hour LOS Summary

Intersection	Movement		Existing (2022)		Future (2029) No-Build		Future (2029) Build at Wildwood Site		Future (2029) Build at Fort River Site	
			LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²
Main Street at North East Street and South East Street	NB	L	D (40.8)	#184	D (39.1)	#188	D (42.8)	#200	D (42.7)	#234
		T,R	B (18.9)	144	B (18.9)	148	B (20.0)	158	C (20.4)	186
		App	C (28.5)	-	C (27.7)	-	C (30.0)	-	C (30.1)	-
	SB	L,T,R	C (24.9)	200	C (24.5)	206	C (25.4)	212	C (23.4)	215
	EB	L,T	C (30.7)	156	C (30.0)	161	C (30.8)	177	C (31.5)	161
		R	A (6.0)	40	A (6.0)	44	A (5.7)	43	A (6.1)	45
		App	B (19.7)	-	B (19.3)	-	C (20.2)	-	B (19.8)	-
	WB	L,T,R	D (37.3)	162	D (36.6)	164	D (35.7)	167	D (43.7)	170
	Intersection		C (26.4)	-	C (25.9)	-	C (26.9)	-	C (27.8)	-
Main Street at Triangle Street and Dickinson Street	NB	L,T,R	C (28.4)	60	C (27.2)	62	C (28.9)	64	C (28.0)	63
	SB	L,T,R	D (46.7)	#441	D (40.9)	#459	D (44.3)	#484	D (43.1)	#481
	EB	L,T,R	E (72.9)	321	E (75.3)	335	E (69.9)	366	F (82.8)	347
	WB	L,T	D (53.5)	253	E (55.1)	260	D (52.3)	258	E (56.7)	279
		R	B (11.7)	71	B (11.6)	78	B (11.5)	80	B (11.2)	81
		App	C (33.5)	-	C (34.2)	-	C (32.5)	-	C (34.9)	-
	Intersection		D (47.6)	-	D (46.3)	-	D (46.0)	-	D (48.9)	-
South East Street at College Street	NB	L	E (63.4)	81	E (62.9)	83	E (65.5)	86	E (63.8)	84
		T,R	E (62.3)	136	E (61.6)	140	E (63.8)	148	E (62.4)	153
		App	E (62.7)	-	E (62.0)	-	E (64.4)	-	E (62.8)	-
	SB	L	E (57.8)	#457	D (50.2)	#475	D (53.2)	#505	D (51.5)	#485
		T,R	D (36.1)	229	C (34.4)	238	D (36.2)	249	C (34.6)	246
		App	D (49.4)	-	D (44.0)	-	D (46.6)	-	D (44.8)	-
	EB	L	E (64.0)	120	E (63.6)	121	E (66.0)	126	E (64.4)	132
		T,R	D (47.7)	384	D (48.8)	392	D (50.7)	443	D (48.8)	397
		App	D (50.7)	-	D (51.5)	-	D (53.3)	-	D (51.9)	-
	WB	L	E (56.4)	37	E (55.8)	38	E (58.5)	39	E (56.5)	39
		T,R	D (51.3)	214	D (50.3)	222	D (47.9)	221	D (51.8)	227
		App	D (51.7)	-	D (50.7)	-	D (48.7)	-	D (52.1)	-
	Intersection		D (51.5)	-	D (49.4)	-	D (51.1)	-	D (50.2)	-



Amherst Elementary Schools TIA

Intersection	Movement	Existing (2022)		Future (2029) No-Build		Future (2029) Build at Wildwood Site		Future (2029) Build at Fort River Site	
		LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²
East Pleasant Street at Strong Street	NB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	SB	A (3.0)	13	A (3.0)	10	A (3.3)	13	A (3.0)	10
	WB	D (32.1)	108	C (20.4)	53	F (54.6)	180	C (20.8)	60
North East Street at Strong Street	NB	A (2.5)	5	A (2.5)	5	A (2.7)	5	A (2.8)	5
	SB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	EB	B (10.3)	15	B (10.2)	15	B (10.9)	18	B (10.4)	15
Main Street at South Whitney Street and North Whitney Street	NB	D (26.4)	30	C (24.5)	28	D (25.9)	30	D (26.3)	33
	SB	C (19.3)	13	C (18.8)	13	C (19.5)	13	C (19.2)	13
	EB	A (0.2)	0	A (0.2)	0	A (0.2)	0	A (0.2)	0
	WB	A (0.5)	3	A (0.5)	3	A (0.5)	3	A (0.5)	3
South East Street at South East Street Frontage and Fort River Entrance	NB	A (0.0)	0	A (0.0)	0	N/A	N/A	A (0.0)	0
	SB	A (0.4)	3	A (0.4)	3	N/A	N/A	A (0.4)	3
	EB	B (13.2)	5	B (13.0)	5	N/A	N/A	B (14.5)	8
	WB - L	N/A	N/A	N/A	N/A	N/A	N/A	E (40.2)	53
South East Street at Fort River Exit	NB	A (0.0)	0	A (0.0)	0	N/A	N/A	A (0.0)	0
	SB	A (0.0)	0	A (0.0)	0	N/A	N/A	A (0.0)	0
	WB	C (30.7)	110	C (18.5)	35	N/A	N/A	B (12.4)	23
Strong Street at Hills Road	NB	B (10.5)	0	B (10.1)	0	B (10.3)	0	B (10.2)	0
	EB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	WB	A (0.0)	0	A (0.3)	0	A (0.2)	0	A (0.2)	0
Strong Street at Red Gate Lane	NB	A (9.9)	3	A (9.6)	3	A (9.8)	3	A (9.8)	3
	EB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	WB	A (0.4)	0	A (0.5)	0	A (0.4)	0	A (0.4)	0



Amherst Elementary Schools TIA

Intersection	Movement	Existing (2022)		Future (2029) No-Build		Future (2029) Build at Wildwood Site		Future (2029) Build at Fort River Site	
		LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²
East Pleasant Street at Clark Hill Road	NB	A (0.9)	3	A (0.9)	3	A (0.9)	3	A (0.8)	3
	SB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	EB	B (13.7)	20	B (12.2)	13	B (12.7)	15	B (12.4)	15
South East Street at Belchertown Road	NB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	SB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	WB	B (11.6)	40	B (11.2)	33	B (11.2)	33	B (11.4)	38
Strong Street at Wildwood Driveway	NB	B (13.1)	35	B (11.1)	15	B (13.4)	40	N/A	N/A
	EB	A (0.0)	0	A (0.0)	0	A (0.0)	0	N/A	N/A
	WB	A (1.3)	0	A (1.3)	0	A (2.0)	3	N/A	N/A
East Pleasant Street at Triangle Street	NB	A (10.0)	70	A (9.5)	62	A (9.8)	65	A (9.7)	65
	SB	A (9.0)	50	A (8.8)	51	B (10.4)	71	A (8.8)	51
	EB	B (10.7)	84	B (11.2)	90	B (13.2)	107	B (11.3)	91
	WB	A (9.5)	56	A (8.8)	51	A (8.9)	50	A (8.9)	50
	Intersection	A (9.9)	-	A (9.7)	-	B (10.8)	-	A (9.9)	-

App. = Approach

- 95th percentile volume exceeds capacity; queue may be longer

1. Delay shown in seconds per vehicle.

2. Queue Length shown in feet, assuming 25 feet per vehicle



Table 9: Afternoon Peak Hour LOS Summary

Intersection	Movement		Existing (2022)		Future (2029) No-Build		Future (2029) Build at Wildwood Site		Future (2029) Build at Fort River Site	
			LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²
Main Street at North East Street and South East Street	NB	L	E (68.5)	#236	E (64.5)	#244	E (64.5)	#244	E (64.5)	#244
		T,R	C (23.4)	184	C (22.6)	190	C (22.6)	190	C (22.6)	190
		App	D (42.4)	-	D (40.3)	-	D (40.3)	-	D (40.3)	-
	SB	L,T,R	C (33.2)	#288	C (32.7)	#297	C (32.7)	#297	C (32.7)	#297
	EB	L,T	C (33.6)	227	D (37.2)	236	D (37.2)	236	D (37.2)	236
		R	A (4.7)	48	A (4.8)	49	A (4.8)	49	A (4.8)	49
		App	C (20.7)	-	C (22.7)	-	C (22.7)	-	C (22.7)	-
	WB	L,T,R	E (60.5)	#253	E (62.5)	#277	E (62.5)	#277	E (62.5)	#277
	Intersection		D (36.9)	-	D (36.6)	-	D (36.6)	-	D (36.6)	-
Main Street at Triangle Street and Dickinson Street	NB	L,T,R	C (28.1)	73	C (25.7)	73	C (25.7)	73	C (25.7)	73
	SB	L,T,R	F (244.8)	#862	F (172.7)	#820	F (172.7)	#820	F (172.7)	#820
	EB	L,T,R	F (80.3)	346	F (98.7)	#405	F (98.7)	#405	F (98.7)	#405
	WB	L,T	D (48.0)	266	D (54.0)	287	D (54.0)	287	D (54.0)	287
		R	B (11.7)	89	B (11.2)	88	B (11.2)	88	B (11.2)	88
		App	D (29.0)	-	D (31.7)	-	D (31.7)	-	D (31.7)	-
	Intersection		F (118.7)	-	F (95.9)	-	F (95.9)	-	F (95.9)	-
South East Street at College Street	NB	L	E (72.9)	122	E (74.1)	125	E (74.1)	125	E (74.1)	125
		T,R	E (71.4)	157	E (72.1)	160	E (72.1)	160	E (72.1)	160
		App	E (72.0)	-	E (73.0)	-	E (73.0)	-	E (73.0)	-
	SB	L	F (127.9)	#733	F (123.9)	#756	F (123.9)	#756	F (123.9)	#756
		T,R	D (46.2)	272	D (46.8)	278	D (46.8)	278	D (46.8)	278
		App	F (100.5)	-	F (98.1)	-	F (98.1)	-	F (98.1)	-
	EB	L	E (73.2)	157	E (73.9)	159	E (73.9)	159	E (73.9)	159
		T,R	D (42.1)	565	D (42.0)	585	D (42.0)	585	D (42.0)	585
		App	D (47.5)	-	D (47.5)	-	D (47.5)	-	D (47.5)	-
	WB	L	E (59.9)	26	E (61.0)	30	E (61.0)	30	E (61.0)	30
		T,R	D (44.0)	258	D (44.7)	280	D (44.7)	280	D (44.7)	280
		App	D (44.6)	-	D (45.3)	-	D (45.3)	-	D (45.3)	-
	Intersection		E (71.3)	-	E (69.7)	-	E (69.7)	-	E (69.7)	-



Amherst Elementary Schools TIA

Intersection	Movement	Existing (2022)		Future (2029) No-Build		Future (2029) Build at Wildwood Site		Future (2029) Build at Fort River Site	
		LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²
East Pleasant Street at Strong Street	NB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	SB	A (2.7)	10	A (2.7)	10	A (2.7)	10	A (2.7)	10
	WB	D (27.7)	85	C (23.2)	63	C (23.2)	63	C (23.2)	63
North East Street at Strong Street	NB	A (2.6)	5	A (2.6)	5	A (2.6)	5	A (2.6)	5
	SB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	EB	B (10.3)	18	B (10.3)	18	B (10.3)	18	B (10.3)	18
Main Street at South Whitney Street and North Whitney Street	NB	F (60.4)	108	E (42.9)	70	E (42.9)	70	E (42.9)	70
	SB	D (28.3)	20	D (25.3)	13	D (25.3)	13	D (25.3)	13
	EB	A (0.1)	0	A (0.1)	0	A (0.1)	0	A (0.1)	0
	WB	A (0.4)	3	A (0.4)	3	A (0.4)	3	A (0.4)	3
South East Street at South East Street Frontage and Fort River Entrance	NB	A (0.0)	0	A (0.0)	0	N/A	N/A	A (0.0)	0
	SB	A (0.3)	3	A (0.3)	3	N/A	N/A	A (0.3)	3
	EB	B (14.3)	10	B (14.6)	8	N/A	N/A	B (14.6)	8
	WB - L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
South East Street at Fort River Exit	NB	A (0.0)	0	A (0.0)	0	N/A	N/A	A (0.0)	0
	SB	A (0.0)	0	A (0.0)	0	N/A	N/A	A (0.0)	0
	WB	C (18.4)	10	C (19.1)	10	N/A	N/A	C (19.1)	10
Strong Street at Hills Road	NB	B (10.0)	3	A (9.9)	0	A (9.9)	0	A (9.9)	0
	EB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	WB	A (0.1)	0	A (0.2)	0	A (0.2)	0	A (0.2)	0
Strong Street at Red Gate Lane	NB	A (9.5)	3	A (9.5)	3	A (9.5)	3	A (9.5)	3
	EB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	WB	A (0.5)	0	A (0.5)	0	A (0.5)	0	A (0.5)	0



Amherst Elementary Schools TIA

Intersection	Movement	Existing (2022)		Future (2029) No-Build		Future (2029) Build at Wildwood Site		Future (2029) Build at Fort River Site	
		LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²
East Pleasant Street at Clark Hill Road	NB	A (0.8)	3	A (0.8)	3	A (0.8)	3	A (0.8)	3
	SB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	EB	B (14.2)	25	B (13.6)	18	B (13.6)	18	B (13.6)	18
South East Street at Belchertown Road	NB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	SB	A (0.0)	0	A (0.0)	0	A (0.0)	0	A (0.0)	0
	WB	B (12.1)	45	B (12.1)	45	B (12.1)	45	B (12.1)	45
Strong Street at Wildwood Driveway	NB	B (11.6)	20	B (10.7)	10	B (10.7)	10	N/A	N/A
	EB	A (0.0)	0	A (0.0)	0	A (0.0)	0	N/A	N/A
	WB	A (0.7)	0	A (0.0)	0	A (0.0)	0	N/A	N/A
East Pleasant Street at Triangle Street	NB	B (13.2)	97	B (13.5)	100	B (13.5)	100	B (13.5)	100
	SB	C (17.9)	113	C (16.2)	106	C (16.2)	106	C (16.2)	106
	EB	B (18.3)	162	C (18.9)	170	C (18.9)	170	C (18.9)	170
	WB	E (40.3)	356	C (24.8)	228	C (24.8)	228	C (24.8)	228
	Intersection	C (24.9)	-	C (19.1)	-	C (19.1)	-	C (19.1)	-

App. = Approach

- 95th percentile volume exceeds capacity; queue may be longer

1. Delay shown in seconds per vehicle.

2. Queue Length shown in feet, assuming 25 feet per vehicle

Special attention is paid towards the site intersections and nearby intersections for each respective build scenario. For the first build scenario, these intersections involve the intersection of Strong Street at Wildwood Elementary School, East Pleasant Street at Strong Street, and the intersection of South East Street and Strong Street. For the second build scenario, this involves the intersection of South East Street at Fort River Elementary School Exit, South East Street at South East Street Frontage at Fort River Entrance, Main Street at North East Street and South east Street, and South Main Street at College Street.

Under Scenario 1, the site intersection of Strong Street at Wildwood Elementary School will see mild changes to the delay time at its stop-controlled approach, leading to a LOS shift from LOS B to LOS C in the morning, but maintaining a LOS B for the school dismissal. It should be noted that while there is a LOS shift in the morning, this only occurs because the delay was fairly close to the LOS C threshold, and in the build condition, will increase it by less than a second. The intersection of East Pleasant Street at Strong Street will see LOS shift in the morning going from LOS C to LOS D and from LOS C to LOS F in the afternoon for its westbound, stop-controlled approach. Despite this increase in delay time leading to a LOS shift, there should be adequate room for vehicles queuing from the intersection to prevent blocking the site driveway. With a queue



length of approximately 180 feet, there is about 400 feet before vehicles queuing would spill into the site driveway, causing a jammed intersection. The intersection of Strong Street and North East Street will see minimal changes to its stop-controlled approach, with less than a second of delay being added in the morning and school dismissal. As the site intersection operates well in terms of capacity, mitigation options including a conversion to a roundabout to slow cars down along the road will be considered as to not increase delay time and negatively impact the expected operations.

Under Scenario 2, the build scenario involves modeling the southern driveway (currently used as an entrance-only) with an exit lane for vehicles heading south via a westbound lane, to help minimize conflicts for vehicles attempting to exit onto South East Street. The site intersection of South East Street at Fort River Elementary School exit will operate at LOS B for both the morning and school dismissal for westbound right turns, helping to alleviate delay in that approach. The intersection of South East Street at South East Street Frontage and Fort River Elementary School will see its new exit maneuver operate at LOS F in the morning and LOS E during the afternoon. The LOS F will cause a queue length of 250 feet, which is between 10-13 cars. This queue length can be accommodated by the sites intended circulation, however, a delay time of approximately 470 seconds in the morning is an excessive amount of delay. The intersection of Main Street at North East Street and South East Street will have its northbound, approach operate at LOS F in the morning and LOS D in the afternoon. The morning peak hour will increase delay time for northbound movements to an average of approximately 110 seconds, where it initially operated at an LOS D in the future no-build scenario with a delay of about 54 seconds. To alleviate this, mitigation by means of phasing adjustments for the morning and extending the storage length of the northbound left lane will be investigated. The intersection of College Street at South East Street and Belchertown Road will be minimally altered in the build scenario, maintaining a LOS D.



MITIGATION

As mentioned in the section prior, the signalized intersection of Main Street at South East Street and North East Street was analyzed with an additional left turn phase for northbound movements being added to the signal to reduce delay along the northbound approach during the second build scenario. To alleviate speeds along the roadway while not negatively impacting traffic at the site intersection of Wildwood Elementary, the proposal of a roundabout is investigated during the first build scenario. Table 10 below shows the results of the proposed mitigation measures.

Table 10: Morning Peak Hour Mitigation

Intersection	Movement		Future (2029) No-Build		Future (2029) Build at Wildwood Site		Future (2029) Build at Fort River Site		Future (2029) Build at Fort River Site	
			LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²	LOS (Delay ¹)	Queue Length ²
Main Street at North East Street and South East Street	NB	L	F (86.0)	#296	N/A	N/A	F (210.9)	#348	E (56.3)	#259
		T,R	C (27.3)	225	N/A	N/A	C (28.8)	245	C (22.7)	236
		App	D (53.7)	-	N/A	N/A	F (110.5)	-	D (37.8)	-
	SB	L,T,R	C (25.3)	179	N/A	N/A	C (33.6)	#283	E (74.8)	#383
	EB	L,T	C (20.3)	82	N/A	N/A	C (20.3)	82	C (26.6)	101
		R	A (5.3)	30	N/A	N/A	A (5.0)	35	A (6.0)	40
		App	B (13.7)	-	N/A	N/A	B (12.5)	-	B (16.1)	-
	WB	L,T,R	D (48.6)	#392	N/A	N/A	D (48.6)	#392	E (79.8)	#485
	Intersection		D (41.8)	-	N/A	N/A	E (63.9)	-	D (53.8)	-
Strong Street at Wildwood Driveway	NB		B (12.3)	18	C (15.8)	48	N/A	N/A	A (4.5)	18
	EB		A (0.0)	0	A (0.0)	0	N/A	N/A	A (4.9)	24
	WB		A (2.1)	3	A (1.9)	3	N/A	N/A	A (5.1)	20

App. = Approach

- 95th percentile volume exceeds capacity; queue may be longer

1. Delay shown in seconds per vehicle.

2. Queue Length shown in feet, assuming 25 feet per vehicle

As shown in the tables above, the two proposed mitigation strategies can allow for either build scenario to be more viable. The signalized intersection of Main Street at North East Street and South East Street is capable of having its northbound approach improved to LOS D during the morning peak, reducing delay by approximately 80 seconds in the morning. For the site intersection of Strong Street at the Wildwood Elementary School, mitigation by means of placing a roundabout will more evenly distribute delay during the morning peak hour, but will allow for each movement to operate at LOS. A conceptual level design of both the extended storage length with adjusted phasing and the roundabout can be found in Appendix G.



CONCLUSION

Pare Corporation conducted a traffic impact analysis for the build-out of an elementary school at one of two existing school locations. Traffic counts were conducted at several intersections near both schools and at the school driveways. Site visits were made to review the existing conditions within the study area and to analyze circulation patterns at the school. Crash data was collected and compiled, and capacity analyses were performed to determine the impacts this new school may have on the surrounding roadway network.

Based on these analyses, it is anticipated that access to and from either site can occur safely, while also noting limitations for one site's limitations in the event an additional driveway is constructed. From the crash data received and reviewed there were no abnormal patterns identified in terms of the number of crashes or the severity of the crashes that require mitigation or that the addition of the site's traffic would be anticipated to exacerbate.

Level of service (LOS) and delay impacts on the surrounding roadway network in the vicinity of the site varied, with the most significant impact occurring nearest the site intersections for the two build scenarios considered. Construction of the school on the site of Fort River Elementary School will have a more significant impact to the adjacent network, while the site of Wildwood Elementary School will be able to operate with minimal changes at the site itself, and moderate impacts to the adjacent network.

Mitigation scenarios have been reviewed at both sites. At the Wildwood Elementary School site, the potential for reconfiguring the site driveway intersection with Strong Street into a roundabout has been reviewed. It is recommended that this improvement be explored further as means to improve conditions exiting the site and increase safety along Strong Street by calming traffic in the vicinity of the School. Additionally, potential improvements at the intersection of Strong Street and East Pleasant Street are under consideration. Opportunities for adding turn lanes at one or multiple intersections approaches are under consideration. Potential for signalization of the intersection is also under consideration. These alternatives will continue to be studied with the Town.

At the Fort River Elementary School site, improvements associated with widening the northern approach to the Main Street/South East Street/North East Street intersection have been reviewed and would improve traffic conditions under future conditions. The feasibility of this alternative will continue to be investigated by the Project Team given site constraints such as right-of-way and historic preservation. Opportunities for mitigation at the Fort River Elementary School driveways will also continue to be investigated.

In summary, we are of the opinion that the increase in traffic at either site can be mitigated to adequately accommodate the concerns of the town, while maintaining traffic efficiency and safety.



Appendix A

Traffic Count Data





Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: South East Street
E / W: College Street (Route 9)
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - College @ South East
Site Code : 11A
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	South East From North					College From East					South East From South					College From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	7	8	32	1	48	0	23	2	0	25	1	6	7	1	15	3	12	3	0	18	106
07:15 AM	11	11	27	0	49	0	47	0	0	47	0	7	11	0	18	2	17	10	0	29	143
07:30 AM	17	10	38	0	65	1	62	1	0	64	0	12	8	0	20	3	25	14	0	42	191
07:45 AM	12	26	40	1	79	0	64	1	0	65	0	31	20	1	52	8	30	23	0	61	257
Total	47	55	137	2	241	1	196	4	0	201	1	56	46	2	105	16	84	50	0	150	697
08:00 AM	21	35	48	0	104	0	55	2	0	57	2	35	15	0	52	5	49	20	1	75	288
08:15 AM	20	28	48	0	96	0	59	0	0	59	0	28	18	1	47	6	28	16	1	51	253
08:30 AM	11	23	36	0	70	1	62	2	0	65	2	26	22	0	50	1	25	15	0	41	226
08:45 AM	21	24	46	0	91	1	88	4	0	93	3	31	37	0	71	4	44	10	0	58	313
Total	73	110	178	0	361	2	264	8	0	274	7	120	92	1	220	16	146	61	2	225	1080
Grand Total	120	165	315	2	602	3	460	12	0	475	8	176	138	3	325	32	230	111	2	375	1777
Apprch %	19.9	27.4	52.3	0.3		0.6	96.8	2.5	0		2.5	54.2	42.5	0.9		8.5	61.3	29.6	0.5		
Total %	6.8	9.3	17.7	0.1	33.9	0.2	25.9	0.7	0	26.7	0.5	9.9	7.8	0.2	18.3	1.8	12.9	6.2	0.1	21.1	
PCs and Peds	95	92.7	95.6	100	94.7	100	98.3	100	0	98.3	100	89.8	98.6	100	93.8	100	94.8	96.4	100	95.7	95.7
% PCs and Peds	95	92.7	95.6	100	94.7	100	98.3	100	0	98.3	100	89.8	98.6	100	93.8	100	94.8	96.4	100	95.7	95.7
Heavy Vehicles	4	10	13	0	27	0	5	0	0	5	0	13	1	0	14	0	12	4	0	16	62
% Heavy Vehicles	3.3	6.1	4.1	0	4.5	0	1.1	0	0	1.1	0	7.4	0.7	0	4.3	0	5.2	3.6	0	4.3	3.5
Bicycles	2	2	1	0	5	0	3	0	0	3	0	5	1	0	6	0	0	0	0	0	14
% Bicycles	1.7	1.2	0.3	0	0.8	0	0.7	0	0	0.6	0	2.8	0.7	0	1.8	0	0	0	0	0	0.8

	South East From North					College From East					South East From South					College From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	21	35	48	0	104	0	55	2	0	57	2	35	15	0	52	5	49	20	1	75	288
08:15 AM	20	28	48	0	96	0	59	0	0	59	0	28	18	1	47	6	28	16	1	51	253
08:30 AM	11	23	36	0	70	1	62	2	0	65	2	26	22	0	50	1	25	15	0	41	226
08:45 AM	21	24	46	0	91	1	88	4	0	93	3	31	37	0	71	4	44	10	0	58	313
Total Volume	73	110	178	0	361	2	264	8	0	274	7	120	92	1	220	16	146	61	2	225	1080
% App. Total	20.2	30.5	49.3	0		0.7	96.4	2.9	0		3.2	54.5	41.8	0.5		7.1	64.9	27.1	0.9		
PHF	.869	.786	.927	.000	.868	.500	.750	.500	.000	.737	.583	.857	.622	.250	.775	.667	.745	.763	.500	.750	.863



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City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - College @ South East
Site Code : 11A
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	South East From North					College From East					South East From South					College From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	1	1	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	4
07:30 AM	1	0	2	0	3	0	0	0	0	0	0	1	0	0	1	0	1	1	0	2	6
07:45 AM	0	4	4	0	8	0	0	0	0	0	0	2	0	0	2	0	2	0	0	2	12
Total	1	5	7	0	13	0	0	0	0	0	0	3	0	0	3	0	3	3	0	6	22
08:00 AM	0	2	1	0	3	0	2	0	0	2	0	3	0	0	3	0	1	0	0	1	9
08:15 AM	2	1	3	0	6	0	0	0	0	0	0	2	0	0	2	0	1	0	0	1	9
08:30 AM	1	1	2	0	4	0	2	0	0	2	0	2	0	0	2	0	4	1	0	5	13
08:45 AM	0	1	0	0	1	0	1	0	0	1	0	3	1	0	4	0	3	0	0	3	9
Total	3	5	6	0	14	0	5	0	0	5	0	10	1	0	11	0	9	1	0	10	40
Grand Total	4	10	13	0	27	0	5	0	0	5	0	13	1	0	14	0	12	4	0	16	62
Apprch %	14.8	37	48.1	0		0	100	0	0		0	92.9	7.1	0		0	75	25	0		
Total %	6.5	16.1	21	0	43.5	0	8.1	0	0	8.1	0	21	1.6	0	22.6	0	19.4	6.5	0	25.8	

	South East From North					College From East					South East From South					College From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	4	4	0	8	0	0	0	0	0	0	2	0	0	2	0	2	0	0	2	12
08:00 AM	0	2	1	0	3	0	2	0	0	2	0	3	0	0	3	0	1	0	0	1	9
08:15 AM	2	1	3	0	6	0	0	0	0	0	0	2	0	0	2	0	1	0	0	1	9
08:30 AM	1	1	2	0	4	0	2	0	0	2	0	2	0	0	2	0	4	1	0	5	13
Total Volume	3	8	10	0	21	0	4	0	0	4	0	9	0	0	9	0	8	1	0	9	43
% App. Total	14.3	38.1	47.6	0		0	100	0	0		0	100	0	0		0	88.9	11.1	0		
PHF	.375	.500	.625	.000	.656	.000	.500	.000	.000	.500	.000	.750	.000	.000	.750	.000	.500	.250	.000	.450	.827

[illegible]



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N / S: East Pleasant Street
E / W: Clark Hill Road
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - East Pleasant @ Clark Hill
Site Code : 1
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	East Pleasant From North					From East					East Pleasant From South					Clark Hill From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	35	0	0	35	0	0	0	0	0	0	15	4	1	20	1	0	1	2	4	59
07:15 AM	2	42	0	0	44	0	0	0	0	0	0	29	6	0	35	3	0	0	1	4	83
07:30 AM	2	45	0	0	47	0	0	0	0	0	0	34	9	1	44	2	0	1	0	3	94
07:45 AM	0	63	0	0	63	0	0	0	0	0	0	47	16	0	63	2	0	0	0	2	128
Total	4	185	0	0	189	0	0	0	0	0	0	125	35	2	162	8	0	2	3	13	364
08:00 AM	3	84	1	0	88	0	0	0	0	0	0	39	12	3	54	4	0	2	1	7	149
08:15 AM	4	105	0	0	109	0	0	0	0	0	0	70	15	2	87	7	0	0	0	7	203
08:30 AM	6	68	0	0	74	0	0	0	0	0	0	62	19	1	82	2	0	3	1	6	162
08:45 AM	6	123	0	0	129	0	0	0	0	0	0	94	28	0	122	8	0	0	2	10	261
Total	19	380	1	0	400	0	0	0	0	0	0	265	74	6	345	21	0	5	4	30	775
Grand Total	23	565	1	0	589	0	0	0	0	0	0	390	109	8	507	29	0	7	7	43	1139
Apprch %	3.9	95.9	0.2	0		0	0	0	0		0	76.9	21.5	1.6		67.4	0	16.3	16.3		
Total %	2	49.6	0.1	0	51.7	0	0	0	0	0	0	34.2	9.6	0.7	44.5	2.5	0	0.6	0.6	3.8	
PCs and Peds	91.3	91.5	0	0	91.3	0	0	0	0	0	0	91.5	94.5	100	92.3	75.9	0	100	100	83.7	91.5
% PCs and Peds	1	43	1	0	45	0	0	0	0	0	0	33	5	0	38	7	0	0	0	7	90
Heavy Vehicles	4.3	7.6	100	0	7.6	0	0	0	0	0	0	8.5	4.6	0	7.5	24.1	0	0	0	16.3	7.9
% Heavy Vehicles	1	5	0	0	6	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	7
Bicycles	4.3	0.9	0	0	1	0	0	0	0	0	0	0	0.9	0	0.2	0	0	0	0	0	0.6
% Bicycles																					

	East Pleasant From North					From East					East Pleasant From South					Clark Hill From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	3	84	1	0	88	0	0	0	0	0	0	39	12	3	54	4	0	2	1	7	149
08:15 AM	4	105	0	0	109	0	0	0	0	0	0	70	15	2	87	7	0	0	0	7	203
08:30 AM	6	68	0	0	74	0	0	0	0	0	0	62	19	1	82	2	0	3	1	6	162
08:45 AM	6	123	0	0	129	0	0	0	0	0	0	94	28	0	122	8	0	0	2	10	261
Total Volume	19	380	1	0	400	0	0	0	0	0	0	265	74	6	345	21	0	5	4	30	775
% App. Total	4.8	95	0.2	0		0	0	0	0		0	76.8	21.4	1.7		70	0	16.7	13.3		
PHF	.792	.772	.250	.000	.775	.000	.000	.000	.000	.000	.000	.705	.661	.500	.707	.656	.000	.417	.500	.750	.742
PCs and Peds	17	342	0	0	359	0	0	0	0	0	0	250	70	6	326	17	0	5	4	26	711
% PCs and Peds	89.5	90.0	0	0	89.8	0	0	0	0	0	0	94.3	94.6	100	94.5	81.0	0	100	100	86.7	91.7
Heavy Vehicles	1	33	1	0	35	0	0	0	0	0	0	15	3	0	18	4	0	0	0	4	57
% Heavy Vehicles	5.3	8.7	100	0	8.8	0	0	0	0	0	0	5.7	4.1	0	5.2	19.0	0	0	0	13.3	7.4
Bicycles	1	5	0	0	6	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	7
% Bicycles	5.3	1.3	0	0	1.5	0	0	0	0	0	0	0	1.4	0	0.3	0	0	0	0	0	0.9



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N / S: East Pleasant Street
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Client: PARE Corporation

File Name : AM Peak - East Pleasant @ Clark Hill
Site Code : 1
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	East Pleasant From North					From East					East Pleasant From South					Clark Hill From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	4
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	3
07:30 AM	0	4	0	0	4	0	0	0	0	0	0	7	0	0	7	1	0	0	0	1	12
07:45 AM	0	3	0	0	3	0	0	0	0	0	0	9	1	0	10	1	0	0	0	1	14
Total	0	10	0	0	10	0	0	0	0	0	0	18	2	0	20	3	0	0	0	3	33
08:00 AM	0	9	1	0	10	0	0	0	0	0	0	7	1	0	8	1	0	0	0	1	19
08:15 AM	0	10	0	0	10	0	0	0	0	0	0	7	0	0	7	2	0	0	0	2	19
08:30 AM	1	6	0	0	7	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	8
08:45 AM	0	8	0	0	8	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	11
Total	1	33	1	0	35	0	0	0	0	0	0	15	3	0	18	4	0	0	0	4	57
Grand Total	1	43	1	0	45	0	0	0	0	0	0	33	5	0	38	7	0	0	0	7	90
Apprch %	2.2	95.6	2.2	0		0	0	0	0		0	86.8	13.2	0		100	0	0	0		
Total %	1.1	47.8	1.1	0	50	0	0	0	0	0	0	36.7	5.6	0	42.2	7.8	0	0	0	7.8	

	East Pleasant From North					From East					East Pleasant From South					Clark Hill From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	4	0	0	4	0	0	0	0	0	0	7	0	0	7	1	0	0	0	1	12
07:45 AM	0	3	0	0	3	0	0	0	0	0	0	9	1	0	10	1	0	0	0	1	14
08:00 AM	0	9	1	0	10	0	0	0	0	0	0	7	1	0	8	1	0	0	0	1	19
08:15 AM	0	10	0	0	10	0	0	0	0	0	0	7	0	0	7	2	0	0	0	2	19
Total Volume	0	26	1	0	27	0	0	0	0	0	0	30	2	0	32	5	0	0	0	5	64
% App. Total	0	96.3	3.7	0		0	0	0	0		0	93.8	6.2	0		100	0	0	0		
PHF	.000	.650	.250	.000	.675	.000	.000	.000	.000	.000	.000	.833	.500	.000	.800	.625	.000	.000	.000	.625	.842



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N / S: East Pleasant Street
E / W: Strong Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - East Pleasant @ Strong
Site Code : 2
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	East Pleasant From North					Strong From East					East Pleasant From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	29	6	1	36	10	0	1	1	12	3	9	0	0	12	0	0	0	0	0	60
07:15 AM	0	30	13	1	44	12	0	2	0	14	5	20	0	0	25	0	0	0	2	2	85
07:30 AM	0	36	11	0	47	19	0	4	0	23	13	27	0	0	40	0	0	0	0	0	110
07:45 AM	0	38	21	0	59	37	0	12	0	49	22	26	0	0	48	0	0	0	0	0	156
Total	0	133	51	2	186	78	0	19	1	98	43	82	0	0	125	0	0	0	2	2	411
08:00 AM	0	55	37	1	93	28	0	13	5	46	23	20	0	4	47	0	0	0	0	0	186
08:15 AM	0	78	28	0	106	58	0	26	1	85	17	28	0	1	46	0	0	0	0	0	237
08:30 AM	0	66	9	0	75	41	0	10	2	53	7	35	0	3	45	0	0	0	0	0	173
08:45 AM	0	112	18	0	130	56	0	10	1	67	10	72	0	0	82	0	0	0	0	0	279
Total	0	311	92	1	404	183	0	59	9	251	57	155	0	8	220	0	0	0	0	0	875
Grand Total	0	444	143	3	590	261	0	78	10	349	100	237	0	8	345	0	0	0	2	2	1286
Apprch %	0	75.3	24.2	0.5		74.8	0	22.3	2.9		29	68.7	0	2.3		0	0	0	100		
Total %	0	34.5	11.1	0.2	45.9	20.3	0	6.1	0.8	27.1	7.8	18.4	0	0.6	26.8	0	0	0	0.2	0.2	
PCs and Peds																					
% PCs and Peds	0	94.4	94.4	100	94.4	98.5	0	94.9	100	97.7	95	92.8	0	100	93.6	0	0	0	100	100	95.1
Heavy Vehicles	0	22	7	0	29	4	0	4	0	8	5	16	0	0	21	0	0	0	0	0	58
% Heavy Vehicles	0	5	4.9	0	4.9	1.5	0	5.1	0	2.3	5	6.8	0	0	6.1	0	0	0	0	0	4.5
Bicycles	0	3	1	0	4	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	5
% Bicycles	0	0.7	0.7	0	0.7	0	0	0	0	0	0	0.4	0	0	0.3	0	0	0	0	0	0.4

	East Pleasant From North					Strong From East					East Pleasant From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	55	37	1	93	28	0	13	5	46	23	20	0	4	47	0	0	0	0	0	186
08:15 AM	0	78	28	0	106	58	0	26	1	85	17	28	0	1	46	0	0	0	0	0	237
08:30 AM	0	66	9	0	75	41	0	10	2	53	7	35	0	3	45	0	0	0	0	0	173
08:45 AM	0	112	18	0	130	56	0	10	1	67	10	72	0	0	82	0	0	0	0	0	279
Total Volume	0	311	92	1	404	183	0	59	9	251	57	155	0	8	220	0	0	0	0	0	875
% App. Total	0	77	22.8	0.2		72.9	0	23.5	3.6		25.9	70.5	0	3.6		0	0	0	0		
PHF	.000	.694	.622	.250	.777	.789	.000	.567	.450	.738	.620	.538	.000	.500	.671	.000	.000	.000	.000	.000	.784



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: East Pleasant Street
E / W: Strong Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - East Pleasant @ Strong
Site Code : 2
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	East Pleasant From North					Strong From East					East Pleasant From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
07:15 AM	0	1	1	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
07:30 AM	0	4	0	0	4	0	0	0	0	0	2	5	0	0	7	0	0	0	0	0	11
07:45 AM	0	0	0	0	0	1	0	1	0	2	1	2	0	0	3	0	0	0	0	0	5
Total	0	6	1	0	7	1	0	1	0	2	3	10	0	0	13	0	0	0	0	0	22
08:00 AM	0	2	4	0	6	1	0	1	0	2	0	3	0	0	3	0	0	0	0	0	11
08:15 AM	0	4	2	0	6	2	0	2	0	4	1	1	0	0	2	0	0	0	0	0	12
08:30 AM	0	2	0	0	2	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	4
08:45 AM	0	8	0	0	8	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	9
Total	0	16	6	0	22	3	0	3	0	6	2	6	0	0	8	0	0	0	0	0	36
Grand Total	0	22	7	0	29	4	0	4	0	8	5	16	0	0	21	0	0	0	0	0	58
Apprch %	0	75.9	24.1	0		50	0	50	0		23.8	76.2	0	0		0	0	0	0		
Total %	0	37.9	12.1	0	50	6.9	0	6.9	0	13.8	8.6	27.6	0	0	36.2	0	0	0	0	0	

	East Pleasant From North					Strong From East					East Pleasant From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	4	0	0	4	0	0	0	0	0	2	5	0	0	7	0	0	0	0	0	11
07:45 AM	0	0	0	0	0	1	0	1	0	2	1	2	0	0	3	0	0	0	0	0	5
08:00 AM	0	2	4	0	6	1	0	1	0	2	0	3	0	0	3	0	0	0	0	0	11
08:15 AM	0	4	2	0	6	2	0	2	0	4	1	1	0	0	2	0	0	0	0	0	12
Total Volume	0	10	6	0	16	4	0	4	0	8	4	11	0	0	15	0	0	0	0	0	39
% App. Total	0	62.5	37.5	0		50	0	50	0		26.7	73.3	0	0		0	0	0	0		
PHF	.000	.625	.375	.000	.667	.500	.000	.500	.000	.500	.500	.550	.000	.000	.536	.000	.000	.000	.000	.000	.813



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: North & South East
E / W: Main Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - Main @ North & South East
Site Code : 10
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	North East From North					Main From East					South East From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	8	22	2	0	32	4	23	7	0	34	4	29	22	2	57	12	8	1	0	21	144
07:15 AM	4	26	3	1	34	7	41	11	1	60	6	47	23	0	76	11	12	2	0	25	195
07:30 AM	4	36	5	0	45	8	41	19	0	68	7	64	47	0	118	12	19	4	0	35	266
07:45 AM	8	56	8	1	73	19	79	22	1	121	11	61	45	1	118	14	22	1	0	37	349
Total	24	140	18	2	184	38	184	59	2	283	28	201	137	3	369	49	61	8	0	118	954
08:00 AM	5	45	8	5	63	12	64	30	6	112	12	65	29	3	109	22	22	1	0	45	329
08:15 AM	18	50	8	3	79	19	78	24	4	125	18	72	55	1	146	19	26	4	0	49	399
08:30 AM	11	30	5	2	48	17	62	17	1	97	12	56	76	0	144	18	26	4	0	48	337
08:45 AM	14	44	7	0	65	13	80	13	0	106	11	63	93	3	170	26	17	9	0	52	393
Total	48	169	28	10	255	61	284	84	11	440	53	256	253	7	569	85	91	18	0	194	1458
Grand Total	72	309	46	12	439	99	468	143	13	723	81	457	390	10	938	134	152	26	0	312	2412
Apprch %	16.4	70.4	10.5	2.7		13.7	64.7	19.8	1.8		8.6	48.7	41.6	1.1		42.9	48.7	8.3	0		
Total %	3	12.8	1.9	0.5	18.2	4.1	19.4	5.9	0.5	30	3.4	18.9	16.2	0.4	38.9	5.6	6.3	1.1	0	12.9	
PCs and Peds																					
% PCs and Peds	95.8	96.8	91.3	100	96.1	99	96.8	98.6	100	97.5	91.4	98.5	96.2	100	96.9	92.5	94.7	100	0	94.2	96.6
Heavy Vehicles	2	9	4	0	15	1	12	2	0	15	7	7	12	0	26	10	8	0	0	18	74
% Heavy Vehicles	2.8	2.9	8.7	0	3.4	1	2.6	1.4	0	2.1	8.6	1.5	3.1	0	2.8	7.5	5.3	0	0	5.8	3.1
Bicycles	1	1	0	0	2	0	3	0	0	3	0	0	3	0	3	0	0	0	0	0	8
% Bicycles	1.4	0.3	0	0	0.5	0	0.6	0	0	0.4	0	0	0.8	0	0.3	0	0	0	0	0	0.3

	North East From North					Main From East					South East From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	5	45	8	5	63	12	64	30	6	112	12	65	29	3	109	22	22	1	0	45	329
08:15 AM	18	50	8	3	79	19	78	24	4	125	18	72	55	1	146	19	26	4	0	49	399
08:30 AM	11	30	5	2	48	17	62	17	1	97	12	56	76	0	144	18	26	4	0	48	337
08:45 AM	14	44	7	0	65	13	80	13	0	106	11	63	93	3	170	26	17	9	0	52	393
Total Volume	48	169	28	10	255	61	284	84	11	440	53	256	253	7	569	85	91	18	0	194	1458
% App. Total	18.8	66.3	11	3.9		13.9	64.5	19.1	2.5		9.3	45	44.5	1.2		43.8	46.9	9.3	0		
PHF	.667	.845	.875	.500	.807	.803	.888	.700	.458	.880	.736	.889	.680	.583	.837	.817	.875	.500	.000	.933	.914



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
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N / S: North & South East
E / W: Main Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - Main @ North & South East
Site Code : 10
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	North East From North					Main From East					South East From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	1	0	0	1	0	0	0	0	0	1	0	0	0	1	0	1	0	0	1	3
07:15 AM	0	0	1	0	1	0	3	0	0	3	1	0	0	0	1	2	0	0	0	2	7
07:30 AM	0	1	0	0	1	0	0	0	0	0	1	2	1	0	4	2	2	0	0	4	9
07:45 AM	0	2	2	0	4	0	1	0	0	1	1	1	1	0	3	1	2	0	0	3	11
Total	0	4	3	0	7	0	4	0	0	4	4	3	2	0	9	5	5	0	0	10	30
08:00 AM	0	3	0	0	3	1	0	1	0	2	1	2	2	0	5	1	0	0	0	1	11
08:15 AM	0	2	1	0	3	0	1	0	0	1	0	1	2	0	3	2	2	0	0	4	11
08:30 AM	0	0	0	0	0	0	3	0	0	3	1	1	2	0	4	1	0	0	0	1	8
08:45 AM	2	0	0	0	2	0	4	1	0	5	1	0	4	0	5	1	1	0	0	2	14
Total	2	5	1	0	8	1	8	2	0	11	3	4	10	0	17	5	3	0	0	8	44
Grand Total	2	9	4	0	15	1	12	2	0	15	7	7	12	0	26	10	8	0	0	18	74
Apprch %	13.3	60	26.7	0		6.7	80	13.3	0		26.9	26.9	46.2	0		55.6	44.4	0	0		
Total %	2.7	12.2	5.4	0	20.3	1.4	16.2	2.7	0	20.3	9.5	9.5	16.2	0	35.1	13.5	10.8	0	0	24.3	

	North East From North					Main From East					South East From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	3	0	0	3	1	0	1	0	2	1	2	2	0	5	1	0	0	0	1	11
08:15 AM	0	2	1	0	3	0	1	0	0	1	0	1	2	0	3	2	2	0	0	4	11
08:30 AM	0	0	0	0	0	0	3	0	0	3	1	1	2	0	4	1	0	0	0	1	8
08:45 AM	2	0	0	0	2	0	4	1	0	5	1	0	4	0	5	1	1	0	0	2	14
Total Volume	2	5	1	0	8	1	8	2	0	11	3	4	10	0	17	5	3	0	0	8	44
% App. Total	25	62.5	12.5	0		9.1	72.7	18.2	0		17.6	23.5	58.8	0		62.5	37.5	0	0		
PHF	.250	.417	.250	.000	.667	.250	.500	.500	.000	.550	.750	.500	.625	.000	.850	.625	.375	.000	.000	.500	.786



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: North & South Whitney
E / W: Main Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - Main @ North & South Whitney
Site Code : 9
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	North Whitney From North					Main From East					South Whitney From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	3	0	3	6	1	48	3	0	52	4	0	3	1	8	0	17	0	0	17	83
07:15 AM	2	1	0	1	4	0	59	8	1	68	4	0	2	1	7	2	34	0	0	36	115
07:30 AM	1	3	0	1	5	1	88	6	0	95	2	0	6	0	8	1	45	0	0	46	154
07:45 AM	1	2	0	2	5	4	128	7	0	139	2	3	10	0	15	2	43	3	0	48	207
Total	4	9	0	7	20	6	323	24	1	354	12	3	21	2	38	5	139	3	0	147	559
08:00 AM	4	1	2	2	9	0	92	4	0	96	6	2	7	1	16	4	41	1	0	46	167
08:15 AM	2	1	0	5	8	1	133	11	0	145	7	2	8	1	18	5	46	1	0	52	223
08:30 AM	1	1	1	4	7	2	159	8	0	169	8	3	15	1	27	1	41	1	0	43	246
08:45 AM	2	1	1	7	11	4	199	3	1	207	4	2	18	2	26	3	67	0	0	70	314
Total	9	4	4	18	35	7	583	26	1	617	25	9	48	5	87	13	195	3	0	211	950
Grand Total	13	13	4	25	55	13	906	50	2	971	37	12	69	7	125	18	334	6	0	358	1509
Apprch %	23.6	23.6	7.3	45.5		1.3	93.3	5.1	0.2		29.6	9.6	55.2	5.6		5	93.3	1.7	0		
Total %	0.9	0.9	0.3	1.7	3.6	0.9	60	3.3	0.1	64.3	2.5	0.8	4.6	0.5	8.3	1.2	22.1	0.4	0	23.7	
PCs and Peds																					
% PCs and Peds	100	100	100	68	85.5	100	96.9	100	50	97	100	91.7	98.6	85.7	97.6	100	94.9	100	0	95.3	96.2
Heavy Vehicles	0	0	0	0	0	0	26	0	0	26	0	0	1	1	2	0	17	0	0	17	45
% Heavy Vehicles	0	0	0	0	0	0	2.9	0	0	2.7	0	0	1.4	14.3	1.6	0	5.1	0	0	4.7	3
Bicycles	0	0	0	8	8	0	2	0	1	3	0	1	0	0	1	0	0	0	0	0	12
% Bicycles	0	0	0	32	14.5	0	0.2	0	50	0.3	0	8.3	0	0	0.8	0	0	0	0	0	0.8

	North Whitney From North					Main From East					South Whitney From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	4	1	2	2	9	0	92	4	0	96	6	2	7	1	16	4	41	1	0	46	167
08:15 AM	2	1	0	5	8	1	133	11	0	145	7	2	8	1	18	5	46	1	0	52	223
08:30 AM	1	1	1	4	7	2	159	8	0	169	8	3	15	1	27	1	41	1	0	43	246
08:45 AM	2	1	1	7	11	4	199	3	1	207	4	2	18	2	26	3	67	0	0	70	314
Total Volume	9	4	4	18	35	7	583	26	1	617	25	9	48	5	87	13	195	3	0	211	950
% App. Total	25.7	11.4	11.4	51.4		1.1	94.5	4.2	0.2		28.7	10.3	55.2	5.7		6.2	92.4	1.4	0		
PHF	.563	1.00	.500	.643	.795	.438	.732	.591	.250	.745	.781	.750	.667	.625	.806	.650	.728	.750	.000	.754	.756



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N / S: North & South Whitney
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City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - Main @ North & South Whitney
Site Code : 9
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	North Whitney From North					Main From East					South Whitney From South					Main From West						
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	1	
07:15 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	5	0	0	0	5	8
07:30 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	0	3	4
07:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	0	3	4
Total	0	0	0	0	0	0	5	0	0	5	0	0	0	1	1	0	11	0	0	0	11	17
08:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	2
08:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	0	3	5
08:30 AM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	1	0	0	0	1	6
08:45 AM	0	0	0	0	0	0	13	0	0	13	0	0	1	0	1	0	1	0	0	0	1	15
Total	0	0	0	0	0	0	21	0	0	21	0	0	1	0	1	0	6	0	0	0	6	28
Grand Total	0	0	0	0	0	0	26	0	0	26	0	0	1	1	2	0	17	0	0	0	17	45
Apprch %	0	0	0	0	0	0	100	0	0	100	0	0	50	50	100	0	100	0	0	0	100	100
Total %	0	0	0	0	0	0	57.8	0	0	57.8	0	0	2.2	2.2	4.4	0	37.8	0	0	0	37.8	37.8

	North Whitney From North					Main From East					South Whitney From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
08:15 AM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	5
08:30 AM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	0	1	0	0	1	6
08:45 AM	0	0	0	0	0	0	13	0	0	13	0	0	1	0	1	0	1	0	0	1	15
Total Volume	0	0	0	0	0	0	21	0	0	21	0	0	1	0	1	0	6	0	0	6	28
% App. Total	0	0	0	0	0	0	100	0	0	100	0	0	100	0	100	0	100	0	0	100	100
PHF	.000	.000	.000	.000	.000	.000	.404	.000	.000	.404	.000	.000	.250	.000	.250	.000	.500	.000	.000	.500	.467



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: Triangle & Dickinson
E / W: Main Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - Main @ Triangle & Dickinson
Site Code : 8
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	Triangle From North					Main From East					Dickinson From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	3	1	11	1	16	25	24	3	0	52	1	0	1	1	3	0	8	0	0	8	79
07:15 AM	2	2	17	0	21	32	30	0	0	62	3	0	1	1	5	1	16	3	1	21	109
07:30 AM	1	2	16	1	20	50	38	2	0	90	1	2	4	0	7	0	23	6	0	29	146
07:45 AM	0	4	11	1	16	67	60	1	0	128	1	4	2	0	7	2	31	2	0	35	186
Total	6	9	55	3	73	174	152	6	0	332	6	6	8	2	22	3	78	11	1	93	520
08:00 AM	1	1	26	0	28	43	59	2	0	104	0	8	0	2	10	1	23	4	0	28	170
08:15 AM	1	4	17	3	25	59	70	2	0	131	3	9	2	0	14	1	36	10	0	47	217
08:30 AM	1	1	22	0	24	100	40	3	2	145	3	12	2	3	20	0	32	6	0	38	227
08:45 AM	4	7	29	0	40	148	46	0	1	195	3	31	2	0	36	1	36	15	0	52	323
Total	7	13	94	3	117	350	215	7	3	575	9	60	6	5	80	3	127	35	0	165	937
Grand Total	13	22	149	6	190	524	367	13	3	907	15	66	14	7	102	6	205	46	1	258	1457
Apprch %	6.8	11.6	78.4	3.2		57.8	40.5	1.4	0.3		14.7	64.7	13.7	6.9		2.3	79.5	17.8	0.4		
Total %	0.9	1.5	10.2	0.4	13	36	25.2	0.9	0.2	62.3	1	4.5	1	0.5	7	0.4	14.1	3.2	0.1	17.7	
PCs and Peds																					
% PCs and Peds	92.3	100	100	100	99.5	99.8	98.4	100	100	99.2	100	98.5	100	100	99	100	97.1	95.7	100	96.9	98.8
Heavy Vehicles	1	0	0	0	1	1	4	0	0	5	0	1	0	0	1	0	6	2	0	8	15
% Heavy Vehicles	7.7	0	0	0	0.5	0.2	1.1	0	0	0.6	0	1.5	0	0	1	0	2.9	4.3	0	3.1	1
Bicycles	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
% Bicycles	0	0	0	0	0	0	0.5	0	0	0.2	0	0	0	0	0	0	0	0	0	0	0.1

	Triangle From North					Main From East					Dickinson From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	1	1	26	0	28	43	59	2	0	104	0	8	0	2	10	1	23	4	0	28	170
08:15 AM	1	4	17	3	25	59	70	2	0	131	3	9	2	0	14	1	36	10	0	47	217
08:30 AM	1	1	22	0	24	100	40	3	2	145	3	12	2	3	20	0	32	6	0	38	227
08:45 AM	4	7	29	0	40	148	46	0	1	195	3	31	2	0	36	1	36	15	0	52	323
Total Volume	7	13	94	3	117	350	215	7	3	575	9	60	6	5	80	3	127	35	0	165	937
% App. Total	6	11.1	80.3	2.6		60.9	37.4	1.2	0.5		11.2	75	7.5	6.2		1.8	77	21.2	0		
PHF	.438	.464	.810	.250	.731	.591	.768	.583	.375	.737	.750	.484	.750	.417	.556	.750	.882	.583	.000	.793	.725



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
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N / S: Triangle & Dickinson
E / W: Main Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - Main @ Triangle & Dickinson
Site Code : 8
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	Triangle From North					Main From East					Dickinson From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
08:45 AM	1	0	0	0	1	1	1	0	0	2	0	1	0	0	1	0	4	2	0	6	10
Total	1	0	0	0	1	1	4	0	0	5	0	1	0	0	1	0	6	2	0	8	15
Grand Total	1	0	0	0	1	1	4	0	0	5	0	1	0	0	1	0	6	2	0	8	15
Apprch %	100	0	0	0		20	80	0	0		0	100	0	0		0	75	25	0		
Total %	6.7	0	0	0	6.7	6.7	26.7	0	0	33.3	0	6.7	0	0	6.7	0	40	13.3	0	53.3	

	Triangle From North					Main From East					Dickinson From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:30 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
08:45 AM	1	0	0	0	1	1	1	0	0	2	0	1	0	0	1	0	4	2	0	6	10
Total Volume	1	0	0	0	1	1	4	0	0	5	0	1	0	0	1	0	6	2	0	8	15
% App. Total	100	0	0	0		20	80	0	0		0	100	0	0		0	75	25	0		
PHF	.250	.000	.000	.000	.250	.250	.333	.000	.000	.417	.000	.250	.000	.000	.250	.000	.375	.250	.000	.333	.375



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
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N / S: North East Street
E / W: Strong Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - North East @ Strong
Site Code : 7
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	North East From North					From East					North East From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	1	18	0	0	19	0	0	0	0	0	0	26	7	0	33	5	0	1	0	6	58
07:15 AM	1	29	0	0	30	0	0	0	0	0	0	30	21	0	51	6	0	0	0	6	87
07:30 AM	1	39	0	0	40	0	0	0	0	0	0	42	22	0	64	8	0	3	0	11	115
07:45 AM	4	49	0	0	53	0	0	1	0	1	0	42	42	0	84	7	0	2	0	9	147
Total	7	135	0	0	142	0	0	1	0	1	0	140	92	0	232	26	0	6	0	32	407
08:00 AM	6	35	0	0	41	0	0	0	0	0	0	36	32	0	68	17	0	2	0	19	128
08:15 AM	5	37	0	0	42	0	0	0	0	0	0	44	40	0	84	17	0	2	0	19	145
08:30 AM	0	22	0	0	22	0	0	0	0	0	0	31	47	0	78	5	0	3	0	8	108
08:45 AM	10	44	0	0	54	0	0	0	0	0	0	26	47	0	73	7	0	0	0	7	134
Total	21	138	0	0	159	0	0	0	0	0	0	137	166	0	303	46	0	7	0	53	515
Grand Total	28	273	0	0	301	0	0	1	0	1	0	277	258	0	535	72	0	13	0	85	922
Apprch %	9.3	90.7	0	0		0	0	100	0		0	51.8	48.2	0		84.7	0	15.3	0		
Total %	3	29.6	0	0	32.6	0	0	0.1	0	0.1	0	30	28	0	58	7.8	0	1.4	0	9.2	
PCs and Peds																					
% PCs and Peds	100	97.1	0	0	97.3	0	0	0	0	0	0	97.5	100	0	98.7	98.6	0	84.6	0	96.5	97.9
Heavy Vehicles	0	7	0	0	7	0	0	1	0	1	0	7	0	0	7	1	0	2	0	3	18
% Heavy Vehicles	0	2.6	0	0	2.3	0	0	100	0	100	0	2.5	0	0	1.3	1.4	0	15.4	0	3.5	2
Bicycles	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
% Bicycles	0	0.4	0	0	0.3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.1

	North East From North					From East					North East From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	1	39	0	0	40	0	0	0	0	0	0	42	22	0	64	8	0	3	0	11	115
07:45 AM	4	49	0	0	53	0	0	1	0	1	0	42	42	0	84	7	0	2	0	9	147
08:00 AM	6	35	0	0	41	0	0	0	0	0	0	36	32	0	68	17	0	2	0	19	128
08:15 AM	5	37	0	0	42	0	0	0	0	0	0	44	40	0	84	17	0	2	0	19	145
Total Volume	16	160	0	0	176	0	0	1	0	1	0	164	136	0	300	49	0	9	0	58	535
% App. Total	9.1	90.9	0	0		0	0	100	0		0	54.7	45.3	0		84.5	0	15.5	0		
PHF	.667	.816	.000	.000	.830	.000	.000	.250	.000	.250	.000	.932	.810	.000	.893	.721	.000	.750	.000	.763	.910



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N / S: North East Street
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City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - North East @ Strong
Site Code : 7
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	North East From North					From East					North East From South					Strong From West						
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total	
07:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1	3
07:45 AM	0	1	0	0	1	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	0	4
Total	0	4	0	0	4	0	0	1	0	1	0	2	0	0	2	0	0	1	0	1	1	8
08:00 AM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	3
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	1	2
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	0	0	1	0	1	1	3
08:45 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	3	0	0	3	0	0	0	0	0	0	5	0	0	5	1	0	1	0	2	1	10
Grand Total	0	7	0	0	7	0	0	1	0	1	0	7	0	0	7	1	0	2	0	3	1	18
Apprch %	0	100	0	0		0	0	100	0		0	100	0	0		33.3	0	66.7	0			
Total %	0	38.9	0	0	38.9	0	0	5.6	0	5.6	0	38.9	0	0	38.9	5.6	0	11.1	0	16.7		

	North East From North					From East					North East From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	3
07:45 AM	0	1	0	0	1	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	4
08:00 AM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	2
Total Volume	0	4	0	0	4	0	0	1	0	1	0	5	0	0	5	1	0	1	0	2	12
% App. Total	0	100	0	0		0	0	100	0		0	100	0	0		50	0	50	0		
PHF	.000	.500	.000	.000	.500	.000	.000	.250	.000	.250	.000	.625	.000	.000	.625	.250	.000	.250	.000	.500	.750



Innovative Data, LLC

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N / S: South East Street
E / W: Fort River Enter & Watson Farm
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - S East @ Fort River Enter & Watson
Site Code : 13
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	South East From North					Fort River Entrance From East					South East From South					Watson Farms From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	42	0	0	42	0	0	0	0	0	1	58	0	0	59	2	0	0	0	2	103
07:15 AM	0	46	2	0	48	0	0	0	0	0	6	68	0	0	74	2	0	0	0	2	124
07:30 AM	0	63	7	0	70	0	0	0	0	0	11	126	0	0	137	2	1	1	0	4	211
07:45 AM	0	81	12	0	93	0	0	0	0	0	28	113	0	0	141	1	1	0	0	2	236
Total	0	232	21	0	253	0	0	0	0	0	46	365	0	0	411	7	2	1	0	10	674
08:00 AM	0	94	21	1	116	0	0	0	1	1	51	99	0	0	150	3	1	0	0	4	271
08:15 AM	4	94	20	0	118	0	0	0	0	0	22	117	0	0	139	0	0	0	0	0	257
08:30 AM	0	70	2	0	72	0	0	0	0	0	2	146	0	0	148	1	0	0	0	1	221
08:45 AM	1	83	3	0	87	0	0	0	1	1	3	183	0	0	186	2	0	1	0	3	277
Total	5	341	46	1	393	0	0	0	2	2	78	545	0	0	623	6	1	1	0	8	1026
Grand Total	5	573	67	1	646	0	0	0	2	2	124	910	0	0	1034	13	3	2	0	18	1700
Apprch %	0.8	88.7	10.4	0.2		0	0	0	100		12	88	0	0		72.2	16.7	11.1	0		
Total %	0.3	33.7	3.9	0.1	38	0	0	0	0.1	0.1	7.3	53.5	0	0	60.8	0.8	0.2	0.1	0	1.1	
PCs and Peds																					
% PCs and Peds	80	94.9	92.5	100	94.6	0	0	0	100	100	89.5	97.1	0	0	96.2	84.6	66.7	100	0	83.3	95.5
Heavy Vehicles	0	28	5	0	33	0	0	0	0	0	8	24	0	0	32	2	1	0	0	3	68
% Heavy Vehicles	0	4.9	7.5	0	5.1	0	0	0	0	0	6.5	2.6	0	0	3.1	15.4	33.3	0	0	16.7	4
Bicycles	1	1	0	0	2	0	0	0	0	0	5	2	0	0	7	0	0	0	0	0	9
% Bicycles	20	0.2	0	0	0.3	0	0	0	0	0	4	0.2	0	0	0.7	0	0	0	0	0	0.5

	South East From North					Fort River Entrance From East					South East From South					Watson Farms From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	94	21	1	116	0	0	0	1	1	51	99	0	0	150	3	1	0	0	4	271
08:15 AM	4	94	20	0	118	0	0	0	0	0	22	117	0	0	139	0	0	0	0	0	257
08:30 AM	0	70	2	0	72	0	0	0	0	0	2	146	0	0	148	1	0	0	0	1	221
08:45 AM	1	83	3	0	87	0	0	0	1	1	3	183	0	0	186	2	0	1	0	3	277
Total Volume	5	341	46	1	393	0	0	0	2	2	78	545	0	0	623	6	1	1	0	8	1026
% App. Total	1.3	86.8	11.7	0.3		0	0	0	100		12.5	87.5	0	0		75	12.5	12.5	0		
PHF	.313	.907	.548	.250	.833	.000	.000	.000	.500	.500	.382	.745	.000	.000	.837	.500	.250	.250	.000	.500	.926



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: South East Street
E / W: Fort River Enter & Watson Farm
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - S East @ Fort River Enter & Watson
Site Code : 13
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	South East From North					Fort River Entrance From East					South East From South					Watson Farms From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	2	0	0	2	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	3
07:15 AM	0	3	0	0	3	0	0	0	0	0	1	2	0	0	3	1	0	0	0	1	7
07:30 AM	0	3	1	0	4	0	0	0	0	0	1	5	0	0	6	0	1	0	0	1	11
07:45 AM	0	6	0	0	6	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	8
Total	0	14	1	0	15	0	0	0	0	0	2	10	0	0	12	1	1	0	0	2	29
08:00 AM	0	4	3	0	7	0	0	0	0	0	4	3	0	0	7	1	0	0	0	1	15
08:15 AM	0	6	1	0	7	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	11
08:30 AM	0	2	0	0	2	0	0	0	0	0	1	4	0	0	5	0	0	0	0	0	7
08:45 AM	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	6
Total	0	14	4	0	18	0	0	0	0	0	6	14	0	0	20	1	0	0	0	1	39
Grand Total	0	28	5	0	33	0	0	0	0	0	8	24	0	0	32	2	1	0	0	3	68
Apprch %	0	84.8	15.2	0		0	0	0	0		25	75	0	0		66.7	33.3	0	0		
Total %	0	41.2	7.4	0	48.5	0	0	0	0	0	11.8	35.3	0	0	47.1	2.9	1.5	0	0	4.4	

	South East From North					Fort River Entrance From East					South East From South					Watson Farms From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	3	1	0	4	0	0	0	0	0	1	5	0	0	6	0	1	0	0	1	11
07:45 AM	0	6	0	0	6	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	8
08:00 AM	0	4	3	0	7	0	0	0	0	0	4	3	0	0	7	1	0	0	0	1	15
08:15 AM	0	6	1	0	7	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	11
Total Volume	0	19	5	0	24	0	0	0	0	0	6	13	0	0	19	1	1	0	0	2	45
% App. Total	0	79.2	20.8	0		0	0	0	0		31.6	68.4	0	0		50	50	0	0		
PHF	.000	.792	.417	.000	.857	.000	.000	.000	.000	.000	.375	.650	.000	.000	.679	.250	.250	.000	.000	.500	.750



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: South East Street
E / W: Fort River Elementary Exit
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - South East @ Fort River Exit
Site Code : 12
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	South East From North					Fort River Exit From East					South East From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	44	0	0	44	0	0	0	0	0	0	57	0	0	57	0	0	0	0	0	101
07:15 AM	0	48	0	0	48	0	0	0	0	0	0	74	0	0	74	0	0	0	0	0	122
07:30 AM	0	68	0	0	68	1	0	2	0	3	0	121	0	0	121	0	0	0	0	0	192
07:45 AM	0	92	0	0	92	3	0	1	0	4	0	113	0	0	113	0	0	0	0	0	209
Total	0	252	0	0	252	4	0	3	0	7	0	365	0	0	365	0	0	0	0	0	624
08:00 AM	0	93	0	0	93	10	0	22	1	33	0	100	0	8	108	0	0	0	0	0	234
08:15 AM	0	94	0	0	94	39	0	25	0	64	0	117	0	0	117	0	0	0	0	0	275
08:30 AM	0	69	0	0	69	3	0	6	1	10	0	152	0	0	152	0	0	0	0	0	231
08:45 AM	0	84	0	0	84	0	0	3	0	3	0	179	0	0	179	0	0	0	0	0	266
Total	0	340	0	0	340	52	0	56	2	110	0	548	0	8	556	0	0	0	0	0	1006
Grand Total	0	592	0	0	592	56	0	59	2	117	0	913	0	8	921	0	0	0	0	0	1630
Apprch %	0	100	0	0		47.9	0	50.4	1.7		0	99.1	0	0.9		0	0	0	0		
Total %	0	36.3	0	0	36.3	3.4	0	3.6	0.1	7.2	0	56	0	0.5	56.5	0	0	0	0	0	
PCs and Peds																					
% PCs and Peds	0	95.3	0	0	95.3	91.1	0	83.1	100	87.2	0	96.5	0	100	96.5	0	0	0	0	0	95.4
Heavy Vehicles	0	27	0	0	27	5	0	8	0	13	0	30	0	0	30	0	0	0	0	0	70
% Heavy Vehicles	0	4.6	0	0	4.6	8.9	0	13.6	0	11.1	0	3.3	0	0	3.3	0	0	0	0	0	4.3
Bicycles	0	1	0	0	1	0	0	2	0	2	0	2	0	0	2	0	0	0	0	0	5
% Bicycles	0	0.2	0	0	0.2	0	0	3.4	0	1.7	0	0.2	0	0	0.2	0	0	0	0	0	0.3

	South East From North					Fort River Exit From East					South East From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	93	0	0	93	10	0	22	1	33	0	100	0	8	108	0	0	0	0	0	234
08:15 AM	0	94	0	0	94	39	0	25	0	64	0	117	0	0	117	0	0	0	0	0	275
08:30 AM	0	69	0	0	69	3	0	6	1	10	0	152	0	0	152	0	0	0	0	0	231
08:45 AM	0	84	0	0	84	0	0	3	0	3	0	179	0	0	179	0	0	0	0	0	266
Total Volume	0	340	0	0	340	52	0	56	2	110	0	548	0	8	556	0	0	0	0	0	1006
% App. Total	0	100	0	0		47.3	0	50.9	1.8		0	98.6	0	1.4		0	0	0	0		
PHF	.000	.904	.000	.000	.904	.333	.000	.560	.500	.430	.000	.765	.000	.250	.777	.000	.000	.000	.000	.000	.915



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
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N / S: South East Street
E / W: Fort River Elementary Exit
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - South East @ Fort River Exit
Site Code : 12
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	South East From North					Fort River Exit From East					South East From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
07:15 AM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
07:30 AM	0	2	0	0	2	0	0	2	0	2	0	4	0	0	4	0	0	0	0	0	8
07:45 AM	0	8	0	0	8	1	0	1	0	2	0	2	0	0	2	0	0	0	0	0	12
Total	0	13	0	0	13	1	0	3	0	4	0	9	0	0	9	0	0	0	0	0	26
08:00 AM	0	4	0	0	4	1	0	1	0	2	0	5	0	0	5	0	0	0	0	0	11
08:15 AM	0	4	0	0	4	3	0	3	0	6	0	5	0	0	5	0	0	0	0	0	15
08:30 AM	0	3	0	0	3	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	6
08:45 AM	0	3	0	0	3	0	0	0	0	0	0	9	0	0	9	0	0	0	0	0	12
Total	0	14	0	0	14	4	0	5	0	9	0	21	0	0	21	0	0	0	0	0	44
Grand Total	0	27	0	0	27	5	0	8	0	13	0	30	0	0	30	0	0	0	0	0	70
Apprch %	0	100	0	0		38.5	0	61.5	0		0	100	0	0		0	0	0	0		
Total %	0	38.6	0	0	38.6	7.1	0	11.4	0	18.6	0	42.9	0	0	42.9	0	0	0	0	0	

	South East From North					Fort River Exit From East					South East From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	2	0	0	2	0	0	2	0	2	0	4	0	0	4	0	0	0	0	0	8
07:45 AM	0	8	0	0	8	1	0	1	0	2	0	2	0	0	2	0	0	0	0	0	12
08:00 AM	0	4	0	0	4	1	0	1	0	2	0	5	0	0	5	0	0	0	0	0	11
08:15 AM	0	4	0	0	4	3	0	3	0	6	0	5	0	0	5	0	0	0	0	0	15
Total Volume	0	18	0	0	18	5	0	7	0	12	0	16	0	0	16	0	0	0	0	0	46
% App. Total	0	100	0	0		41.7	0	58.3	0		0	100	0	0		0	0	0	0		
PHF	.000	.563	.000	.000	.563	.417	.000	.583	.000	.500	.000	.800	.000	.000	.800	.000	.000	.000	.000	.000	.767



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: Hills Road
E / W: Strong Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - Strong @ Hills
Site Code : 5
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	From North					Strong From East					Hills From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	7	0	0	7	0	0	0	2	2	1	4	1	0	6	15
07:15 AM	0	0	0	0	0	0	18	0	1	19	0	0	0	0	0	0	8	0	0	8	27
07:30 AM	0	0	0	0	0	0	22	0	0	22	0	0	2	0	2	2	12	1	0	15	39
07:45 AM	0	0	0	0	0	0	51	0	0	51	0	0	8	0	8	0	9	0	0	9	68
Total	0	0	0	0	0	0	98	0	1	99	0	0	10	2	12	3	33	2	0	38	149
08:00 AM	0	0	0	0	0	0	49	0	0	49	0	0	7	2	9	1	22	0	0	23	81
08:15 AM	0	0	0	0	0	0	51	0	0	51	0	0	0	1	1	8	20	0	0	28	80
08:30 AM	0	0	0	0	0	0	44	0	0	44	0	0	2	0	2	0	7	0	0	7	53
08:45 AM	0	0	0	0	0	0	56	1	0	57	0	0	0	0	0	8	6	0	0	14	71
Total	0	0	0	0	0	0	200	1	0	201	0	0	9	3	12	17	55	0	0	72	285
Grand Total	0	0	0	0	0	0	298	1	1	300	0	0	19	5	24	20	88	2	0	110	434
Apprch %	0	0	0	0		0	99.3	0.3	0.3		0	0	79.2	20.8		18.2	80	1.8	0		
Total %	0	0	0	0	0	0	68.7	0.2	0.2	69.1	0	0	4.4	1.2	5.5	4.6	20.3	0.5	0	25.3	
PCs and Peds																					
% PCs and Peds	0	0	0	0	0	0	98.3	100	100	98.3	0	0	63.2	100	70.8	85	90.9	100	0	90	94.7
Heavy Vehicles	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	3	8	0	0	11	16
% Heavy Vehicles	0	0	0	0	0	0	1.7	0	0	1.7	0	0	0	0	0	15	9.1	0	0	10	3.7
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	7	0	7	0	0	0	0	0	7
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	36.8	0	29.2	0	0	0	0	0	1.6

	From North					Strong From East					Hills From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	49	0	0	49	0	0	7	2	9	1	22	0	0	23	81
08:15 AM	0	0	0	0	0	0	51	0	0	51	0	0	0	1	1	8	20	0	0	28	80
08:30 AM	0	0	0	0	0	0	44	0	0	44	0	0	2	0	2	0	7	0	0	7	53
08:45 AM	0	0	0	0	0	0	56	1	0	57	0	0	0	0	0	8	6	0	0	14	71
Total Volume	0	0	0	0	0	0	200	1	0	201	0	0	9	3	12	17	55	0	0	72	285
% App. Total	0	0	0	0		0	99.5	0.5	0		0	0	75	25		23.6	76.4	0	0		
PHF	.000	.000	.000	.000	.000	.000	.893	.250	.000	.882	.000	.000	.321	.375	.333	.531	.625	.000	.000	.643	.880



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: Hills Road
E / W: Strong Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - Strong @ Hills
Site Code : 5
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	From North					Strong From East					Hills From South					Strong From West						
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total	
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	
07:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	0	3	4
08:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	0	1	4
08:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	2	0	0	0	3	4
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2	2
Total	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	3	5	0	0	0	8	12
Grand Total	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	3	8	0	0	0	11	16
Apprch %	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	27.3	72.7	0	0	0	0	0
Total %	0	0	0	0	0	0	31.2	0	0	31.2	0	0	0	0	0	18.8	50	0	0	0	68.8	0

	From North					Strong From East					Hills From South					Strong From West						
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total	
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 07:30 AM																						
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
07:45 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
08:00 AM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	0	1	4
08:15 AM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	2	0	0	0	3	4
Total Volume	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	1	6	0	0	0	7	12
% App. Total	0	0	0	0	0	0	100	0	0	0	0	0	0	0	0	14.3	85.7	0	0	0	0	0
PHF	.000	.000	.000	.000	.000	.000	.417	.000	.000	.417	.000	.000	.000	.000	.000	.250	.500	.000	.000	.583	.750	



Innovative Data, LLC

P. O. Box 468
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N / S: Red Gate Lane
E / W: Strong Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - Strong @ Red Gate
Site Code : 6
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	From North					Strong From East					Red Gate From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	8	0	0	8	0	0	0	1	1	0	4	0	0	4	13
07:15 AM	0	0	0	0	0	0	21	0	0	21	0	0	0	0	0	0	8	0	0	8	29
07:30 AM	0	0	0	0	0	0	22	0	0	22	0	0	1	0	1	1	11	0	0	12	35
07:45 AM	0	0	0	0	0	0	49	2	0	51	0	0	4	0	4	0	8	0	0	8	63
Total	0	0	0	0	0	0	100	2	0	102	0	0	5	1	6	1	31	0	0	32	140
08:00 AM	0	0	0	0	0	0	40	3	0	43	1	0	5	0	6	3	23	0	0	26	75
08:15 AM	0	0	0	0	0	0	46	1	0	47	0	0	2	0	2	1	15	0	0	16	65
08:30 AM	0	0	0	0	0	0	44	1	0	45	3	0	1	0	4	0	7	0	0	7	56
08:45 AM	0	0	0	0	0	0	55	7	0	62	3	0	1	1	5	0	6	0	0	6	73
Total	0	0	0	0	0	0	185	12	0	197	7	0	9	1	17	4	51	0	0	55	269
Grand Total	0	0	0	0	0	0	285	14	0	299	7	0	14	2	23	5	82	0	0	87	409
Apprch %	0	0	0	0		0	95.3	4.7	0		30.4	0	60.9	8.7		5.7	94.3	0	0		
Total %	0	0	0	0	0	0	69.7	3.4	0	73.1	1.7	0	3.4	0.5	5.6	1.2	20	0	0	21.3	
PCs and Peds																					
% PCs and Peds	0	0	0	0	0	0	100	100	0	100	100	0	92.9	100	95.7	100	95.1	0	0	95.4	98.8
Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	4	0	0	4	5
% Heavy Vehicles	0	0	0	0	0	0	0	0	0	0	0	0	7.1	0	4.3	0	4.9	0	0	4.6	1.2
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

	From North					Strong From East					Red Gate From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	0	0	0	40	3	0	43	1	0	5	0	6	3	23	0	0	26	75
08:15 AM	0	0	0	0	0	0	46	1	0	47	0	0	2	0	2	1	15	0	0	16	65
08:30 AM	0	0	0	0	0	0	44	1	0	45	3	0	1	0	4	0	7	0	0	7	56
08:45 AM	0	0	0	0	0	0	55	7	0	62	3	0	1	1	5	0	6	0	0	6	73
Total Volume	0	0	0	0	0	0	185	12	0	197	7	0	9	1	17	4	51	0	0	55	269
% App. Total	0	0	0	0		0	93.9	6.1	0		41.2	0	52.9	5.9		7.3	92.7	0	0		
PHF	.000	.000	.000	.000	.000	.000	.841	.429	.000	.794	.583	.000	.450	.250	.708	.333	.554	.000	.000	.529	.897



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: Red Gate Lane
E / W: Strong Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - Strong @ Red Gate
Site Code : 6
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	From North					Strong From East					Red Gate From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	2
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	3	0	0	3	4
Grand Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	4	0	0	4	5
Apprch %	0	0	0	0		0	0	0	0		0	0	100	0		0	100	0	0		
Total %	0	0	0	0		0	0	0	0		0	0	20	0	20	0	80	0	0	80	

	From North					Strong From East					Red Gate From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
08:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	1	2
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
Total Volume	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	3	0	0	3	4
% App. Total	0	0	0	0		0	0	0	0		0	0	100	0		0	100	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.000	.750	.000	.000	.750	.500



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
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N / S: Wildwood Elementary
E / W: Strong Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - Strong @ Wildwood Elementary
Site Code : 4
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	From North					Strong From East					Wildwood From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	8	1	0	9	0	0	0	1	1	2	7	0	0	9	19
07:15 AM	0	0	0	0	0	0	13	5	0	18	0	0	1	2	3	8	8	0	0	16	37
07:30 AM	0	0	0	0	0	0	22	4	0	26	3	0	1	0	4	11	12	0	0	23	53
07:45 AM	0	0	0	0	0	0	40	14	0	54	0	0	6	1	7	33	8	0	0	41	102
Total	0	0	0	0	0	0	83	24	0	107	3	0	8	4	15	54	35	0	0	89	211
08:00 AM	0	0	0	0	0	0	24	25	1	50	11	0	19	3	33	48	17	0	0	65	148
08:15 AM	0	0	0	0	0	0	40	10	1	51	10	0	42	2	54	36	13	0	0	49	154
08:30 AM	0	0	0	0	0	0	39	3	1	43	1	0	10	1	12	9	6	0	0	15	70
08:45 AM	0	0	0	0	0	0	52	1	0	53	0	0	10	0	10	6	18	0	0	24	87
Total	0	0	0	0	0	0	155	39	3	197	22	0	81	6	109	99	54	0	0	153	459
Grand Total	0	0	0	0	0	0	238	63	3	304	25	0	89	10	124	153	89	0	0	242	670
Apprch %	0	0	0	0		0	78.3	20.7	1		20.2	0	71.8	8.1		63.2	36.8	0	0		
Total %	0	0	0	0	0	0	35.5	9.4	0.4	45.4	3.7	0	13.3	1.5	18.5	22.8	13.3	0	0	36.1	
PCs and Peds																					
% PCs and Peds	0	0	0	0	0	0	100	98.4	100	99.7	96	0	91	100	92.7	94.1	97.8	0	0	95.5	96.9
Heavy Vehicles	0	0	0	0	0	0	0	1	0	1	1	0	8	0	9	7	2	0	0	9	19
% Heavy Vehicles	0	0	0	0	0	0	0	1.6	0	0.3	4	0	9	0	7.3	4.6	2.2	0	0	3.7	2.8
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	2
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1.3	0	0	0	0.8	0.3

	From North					Strong From East					Wildwood From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	0	0	0	0	0	40	14	0	54	0	0	6	1	7	33	8	0	0	41	102
08:00 AM	0	0	0	0	0	0	24	25	1	50	11	0	19	3	33	48	17	0	0	65	148
08:15 AM	0	0	0	0	0	0	40	10	1	51	10	0	42	2	54	36	13	0	0	49	154
08:30 AM	0	0	0	0	0	0	39	3	1	43	1	0	10	1	12	9	6	0	0	15	70
Total Volume	0	0	0	0	0	0	143	52	3	198	22	0	77	7	106	126	44	0	0	170	474
% App. Total	0	0	0	0		0	72.2	26.3	1.5		20.8	0	72.6	6.6		74.1	25.9	0	0		
PHF	.000	.000	.000	.000	.000	.000	.894	.520	.750	.917	.500	.000	.458	.583	.491	.656	.647	.000	.000	.654	.769



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
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N / S: Wildwood Elementary
E / W: Strong Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - Strong @ Wildwood Elementary
Site Code : 4
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	From North					Strong From East					Wildwood From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	0	0	0	1	3
Total	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	2	1	0	0	3	5
08:00 AM	0	0	0	0	0	0	0	1	0	1	0	0	2	0	2	3	0	0	0	3	6
08:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	4	0	5	2	0	0	0	2	7
08:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
08:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	1	0	1	1	0	6	0	7	5	1	0	0	6	14
Grand Total	0	0	0	0	0	0	0	1	0	1	1	0	8	0	9	7	2	0	0	9	19
Apprch %	0	0	0	0		0	0	100	0		11.1	0	88.9	0		77.8	22.2	0	0		
Total %	0	0	0	0	0	0	0	5.3	0	5.3	5.3	0	42.1	0	47.4	36.8	10.5	0	0	47.4	

	From North					Strong From East					Wildwood From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	2	2
07:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	2	0	2	1	0	0	0	1	3
08:00 AM	0	0	0	0	0	0	0	1	0	1	0	0	2	0	2	3	0	0	0	3	6
08:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	4	0	5	2	0	0	0	2	7
Total Volume	0	0	0	0	0	0	0	1	0	1	1	0	8	0	9	7	1	0	0	8	18
% App. Total	0	0	0	0		0	0	100	0		11.1	0	88.9	0		87.5	12.5	0	0		
PHF	.000	.000	.000	.000	.000	.000	.000	.250	.000	.250	.250	.000	.500	.000	.450	.583	.250	.000	.000	.667	.643



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: East Pleasant Street
E / W: Triangle Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - East Pleasant @ Triangle
Site Code : 3
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	East Pleasant From North					Triangle From East					East Pleasant From South					Triangle From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	5	23	4	3	35	2	23	1	0	26	0	16	19	0	35	13	10	0	2	25	121
07:15 AM	6	25	7	2	40	2	26	1	3	32	0	19	12	0	31	12	8	7	0	27	130
07:30 AM	4	33	5	3	45	3	46	4	2	55	2	27	16	0	45	14	15	6	3	38	183
07:45 AM	7	29	7	1	44	3	52	4	0	59	4	45	43	2	94	21	18	16	2	57	254
Total	22	110	23	9	164	10	147	10	5	172	6	107	90	2	205	60	51	29	7	147	688
08:00 AM	10	42	8	4	64	6	29	8	0	43	3	40	31	0	74	23	22	10	0	55	236
08:15 AM	11	61	13	6	91	7	59	10	1	77	6	40	36	3	85	31	27	6	0	64	317
08:30 AM	8	42	9	8	67	11	81	14	1	107	4	40	40	2	86	30	19	8	5	62	322
08:45 AM	17	33	12	3	65	28	123	20	1	172	11	45	42	3	101	35	49	12	7	103	441
Total	46	178	42	21	287	52	292	52	3	399	24	165	149	8	346	119	117	36	12	284	1316
Grand Total	68	288	65	30	451	62	439	62	8	571	30	272	239	10	551	179	168	65	19	431	2004
Apprch %	15.1	63.9	14.4	6.7		10.9	76.9	10.9	1.4		5.4	49.4	43.4	1.8		41.5	39	15.1	4.4		
Total %	3.4	14.4	3.2	1.5	22.5	3.1	21.9	3.1	0.4	28.5	1.5	13.6	11.9	0.5	27.5	8.9	8.4	3.2	0.9	21.5	
PCs and Peds	88.2	95.8	100	90	94.9	98.4	98.4	90.3	100	97.5	93.3	96	83.3	100	90.4	86	97.6	81.5	94.7	90.3	93.4
% PCs and Peds	88.2	95.8	100	90	94.9	98.4	98.4	90.3	100	97.5	93.3	96	83.3	100	90.4	86	97.6	81.5	94.7	90.3	93.4
Heavy Vehicles	7	11	0	0	18	1	0	5	0	6	2	11	33	0	46	25	3	11	1	40	110
% Heavy Vehicles	10.3	3.8	0	0	4	1.6	0	8.1	0	1.1	6.7	4	13.8	0	8.3	14	1.8	16.9	5.3	9.3	5.5
Bicycles	1	1	0	3	5	0	7	1	0	8	0	0	7	0	7	0	1	1	0	2	22
% Bicycles	1.5	0.3	0	10	1.1	0	1.6	1.6	0	1.4	0	0	2.9	0	1.3	0	0.6	1.5	0	0.5	1.1

	East Pleasant From North					Triangle From East					East Pleasant From South					Triangle From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	10	42	8	4	64	6	29	8	0	43	3	40	31	0	74	23	22	10	0	55	236
08:15 AM	11	61	13	6	91	7	59	10	1	77	6	40	36	3	85	31	27	6	0	64	317
08:30 AM	8	42	9	8	67	11	81	14	1	107	4	40	40	2	86	30	19	8	5	62	322
08:45 AM	17	33	12	3	65	28	123	20	1	172	11	45	42	3	101	35	49	12	7	103	441
Total Volume	46	178	42	21	287	52	292	52	3	399	24	165	149	8	346	119	117	36	12	284	1316
% App. Total	16	62	14.6	7.3		13	73.2	13	0.8		6.9	47.7	43.1	2.3		41.9	41.2	12.7	4.2		
PHF	.676	.730	.808	.656	.788	.464	.593	.650	.750	.580	.545	.917	.887	.667	.856	.850	.597	.750	.429	.689	.746



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N / S: East Pleasant Street
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City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : AM Peak - East Pleasant @ Triangle
Site Code : 3
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	East Pleasant From North					Triangle From East					East Pleasant From South					Triangle From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
07:00 AM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	3	1	0	0	4	6
07:15 AM	1	1	0	0	2	0	0	0	0	0	0	0	2	0	2	2	0	1	0	3	7
07:30 AM	1	2	0	0	3	1	0	0	0	1	0	3	5	0	8	6	0	2	1	9	21
07:45 AM	1	1	0	0	2	0	0	0	0	0	0	1	6	0	7	2	0	2	0	4	13
Total	3	4	0	0	7	1	0	0	0	1	0	5	14	0	19	13	1	5	1	20	47
08:00 AM	1	2	0	0	3	0	0	0	0	0	0	3	8	0	11	4	0	2	0	6	20
08:15 AM	1	2	0	0	3	0	0	0	0	0	0	1	1	0	2	2	1	1	0	4	9
08:30 AM	0	2	0	0	2	0	0	0	0	0	0	0	3	0	3	4	0	2	0	6	11
08:45 AM	2	1	0	0	3	0	0	5	0	5	2	2	7	0	11	2	1	1	0	4	23
Total	4	7	0	0	11	0	0	5	0	5	2	6	19	0	27	12	2	6	0	20	63
Grand Total	7	11	0	0	18	1	0	5	0	6	2	11	33	0	46	25	3	11	1	40	110
Apprch %	38.9	61.1	0	0		16.7	0	83.3	0		4.3	23.9	71.7	0		62.5	7.5	27.5	2.5		
Total %	6.4	10	0	0	16.4	0.9	0	4.5	0	5.5	1.8	10	30	0	41.8	22.7	2.7	10	0.9	36.4	

	East Pleasant From North					Triangle From East					East Pleasant From South					Triangle From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	1	2	0	0	3	1	0	0	0	1	0	3	5	0	8	6	0	2	1	9	21
07:45 AM	1	1	0	0	2	0	0	0	0	0	0	1	6	0	7	2	0	2	0	4	13
08:00 AM	1	2	0	0	3	0	0	0	0	0	0	3	8	0	11	4	0	2	0	6	20
08:15 AM	1	2	0	0	3	0	0	0	0	0	0	1	1	0	2	2	1	1	0	4	9
Total Volume	4	7	0	0	11	1	0	0	0	1	0	8	20	0	28	14	1	7	1	23	63
% App. Total	36.4	63.6	0	0		100	0	0	0		0	28.6	71.4	0		60.9	4.3	30.4	4.3		
PHF	1.00	.875	.000	.000	.917	.250	.000	.000	.000	.250	.000	.667	.625	.000	.636	.583	.250	.875	.250	.639	.750



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: South East Street
E / W: College Street (Route 9)
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : PM Peak - College @ South East
Site Code : 11A
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	South East From North					College From East					South East From South					College From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	14	26	76	6	122	0	47	4	2	53	1	15	11	2	29	9	66	14	1	90	294
02:15 PM	11	23	56	1	91	1	45	3	1	50	4	19	12	5	40	11	53	14	1	79	260
02:30 PM	19	28	90	3	140	0	35	2	0	37	2	19	12	0	33	17	72	14	0	103	313
02:45 PM	18	38	60	0	116	1	50	7	0	58	0	21	5	1	27	15	61	21	0	97	298
Total	62	115	282	10	469	2	177	16	3	198	7	74	40	8	129	52	252	63	2	369	1165
03:00 PM	29	29	103	2	163	0	41	2	1	44	1	20	13	2	36	19	69	21	0	109	352
03:15 PM	26	34	84	1	145	0	46	3	0	49	4	17	14	4	39	13	79	25	0	117	350
03:30 PM	15	33	89	3	140	0	58	0	0	58	5	26	14	6	51	13	79	24	0	116	365
03:45 PM	22	32	119	4	177	0	51	0	0	51	2	22	19	3	46	22	91	20	3	136	410
Total	92	128	395	10	625	0	196	5	1	202	12	85	60	15	172	67	318	90	3	478	1477
04:00 PM	14	40	97	5	156	0	55	2	1	58	1	18	14	5	38	20	96	23	0	139	391
04:15 PM	15	28	90	2	135	1	52	6	0	59	4	17	20	2	43	19	102	25	3	149	386
04:30 PM	15	28	88	5	136	1	47	1	0	49	4	28	10	1	43	18	88	17	0	123	351
04:45 PM	15	32	80	3	130	0	53	6	11	70	0	23	12	3	38	17	95	28	2	142	380
Total	59	128	355	15	557	2	207	15	12	236	9	86	56	11	162	74	381	93	5	553	1508
05:00 PM	19	32	108	5	164	0	59	5	1	65	0	24	9	3	36	14	90	19	7	130	395
05:15 PM	19	38	110	7	174	0	45	2	1	48	6	29	20	2	57	17	83	27	0	127	406
05:30 PM	7	22	82	7	118	0	36	7	0	43	2	20	11	1	34	17	65	20	3	105	300
05:45 PM	14	25	66	5	110	1	40	2	1	44	3	21	8	0	32	14	56	23	0	93	279
Total	59	117	366	24	566	1	180	16	3	200	11	94	48	6	159	62	294	89	10	455	1380
Grand Total	272	488	1398	59	2217	5	760	52	19	836	39	339	204	40	622	255	1245	335	20	1855	5530
Apprch %	12.3	22	63.1	2.7		0.6	90.9	6.2	2.3		6.3	54.5	32.8	6.4		13.7	67.1	18.1	1.1		
Total %	4.9	8.8	25.3	1.1	40.1	0.1	13.7	0.9	0.3	15.1	0.7	6.1	3.7	0.7	11.2	4.6	22.5	6.1	0.4	33.5	
PCs and Peds	267	451	1357	43	2118	5	737	51	15	808	38	314	197	36	585	247	1215	322	15	1799	5310
% PCs and Peds	98.2	92.4	97.1	72.9	95.5	100	97	98.1	78.9	96.7	97.4	92.6	96.6	90	94.1	96.9	97.6	96.1	75	97	96
Heavy Vehicles	3	32	36	0	71	0	14	0	0	14	1	19	4	0	24	8	13	12	0	33	142
% Heavy Vehicles	1.1	6.6	2.6	0	3.2	0	1.8	0	0	1.7	2.6	5.6	2	0	3.9	3.1	1	3.6	0	1.8	2.6
Bicycles	2	5	5	16	28	0	9	1	4	14	0	6	3	4	13	0	17	1	5	23	78
% Bicycles	0.7	1	0.4	27.1	1.3	0	1.2	1.9	21.1	1.7	0	1.8	1.5	10	2.1	0	1.4	0.3	25	1.2	1.4

	South East From North					College From East					South East From South					College From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:30 PM																					
03:30 PM	15	33	89	3	140	0	58	0	0	58	5	26	14	6	51	13	79	24	0	116	365
03:45 PM	22	32	119	4	177	0	51	0	0	51	2	22	19	3	46	22	91	20	3	136	410
04:00 PM	14	40	97	5	156	0	55	2	1	58	1	18	14	5	38	20	96	23	0	139	391
04:15 PM	15	28	90	2	135	1	52	6	0	59	4	17	20	2	43	19	102	25	3	149	386
Total Volume	66	133	395	14	608	1	216	8	1	226	12	83	67	16	178	74	368	92	6	540	1552
% App. Total	10.9	21.9	65	2.3		0.4	95.6	3.5	0.4		6.7	46.6	37.6	9		13.7	68.1	17	1.1		
PHF	.750	.831	.830	.700	.859	.250	.931	.333	.250	.958	.600	.798	.838	.667	.873	.841	.902	.920	.500	.906	.946



Innovative Data, LLC

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Belchertown, Massachusetts
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N / S: South East Street
E / W: College Street (Route 9)
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : PM Peak - College @ South East
Site Code : 11A
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	South East From North					College From East					South East From South					College From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	2	1	0	3	0	0	0	0	0	1	1	0	0	2	1	2	2	0	5	10
02:15 PM	0	0	3	0	3	0	0	0	0	0	0	1	0	0	1	1	0	1	0	2	6
02:30 PM	0	5	3	0	8	0	1	0	0	1	0	1	1	0	2	1	0	1	0	2	13
02:45 PM	0	3	0	0	3	0	2	0	0	2	0	0	0	0	0	1	1	1	0	3	8
Total	0	10	7	0	17	0	3	0	0	3	1	3	1	0	5	4	3	5	0	12	37
03:00 PM	1	1	0	0	2	0	1	0	0	1	0	2	0	0	2	1	2	0	0	3	8
03:15 PM	0	1	5	0	6	0	1	0	0	1	0	3	0	0	3	1	2	3	0	6	16
03:30 PM	0	1	2	0	3	0	1	0	0	1	0	1	0	0	1	0	2	0	0	2	7
03:45 PM	0	3	10	0	13	0	1	0	0	1	0	0	1	0	1	1	2	1	0	4	19
Total	1	6	17	0	24	0	4	0	0	4	0	6	1	0	7	3	8	4	0	15	50
04:00 PM	0	3	1	0	4	0	1	0	0	1	0	1	0	0	1	1	2	0	0	3	9
04:15 PM	2	2	4	0	8	0	3	0	0	3	0	1	1	0	2	0	0	0	0	0	13
04:30 PM	0	1	2	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
04:45 PM	0	2	0	0	2	0	0	0	0	0	0	1	1	0	2	0	0	1	0	1	5
Total	2	8	7	0	17	0	4	0	0	4	0	5	2	0	7	1	2	1	0	4	32
05:00 PM	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
05:15 PM	0	3	1	0	4	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	6
05:30 PM	0	3	1	0	4	0	3	0	0	3	0	2	0	0	2	0	0	1	0	1	10
05:45 PM	0	2	2	0	4	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	5
Total	0	8	5	0	13	0	3	0	0	3	0	5	0	0	5	0	0	2	0	2	23
Grand Total	3	32	36	0	71	0	14	0	0	14	1	19	4	0	24	8	13	12	0	33	142
Apprch %	4.2	45.1	50.7	0		0	100	0	0		4.2	79.2	16.7	0		24.2	39.4	36.4	0		
Total %	2.1	22.5	25.4	0	50	0	9.9	0	0	9.9	0.7	13.4	2.8	0	16.9	5.6	9.2	8.5	0	23.2	

	South East From North					College From East					South East From South					College From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:15 PM																					
03:15 PM	0	1	5	0	6	0	1	0	0	1	0	3	0	0	3	1	2	3	0	6	16
03:30 PM	0	1	2	0	3	0	1	0	0	1	0	1	0	0	1	0	2	0	0	2	7
03:45 PM	0	3	10	0	13	0	1	0	0	1	0	0	1	0	1	1	2	1	0	4	19
04:00 PM	0	3	1	0	4	0	1	0	0	1	0	1	0	0	1	1	2	0	0	3	9
Total Volume	0	8	18	0	26	0	4	0	0	4	0	5	1	0	6	3	8	4	0	15	51
% App. Total	0	30.8	69.2	0		0	100	0	0		0	83.3	16.7	0		20	53.3	26.7	0		
PHF	.000	.667	.450	.000	.500	.000	1.00	.000	.000	1.00	.000	.417	.250	.000	.500	.750	1.00	.333	.000	.625	.671

Innovative Data, LLC

P. O. Box 468

Belchertown, Massachusetts

InnovativeDataIc.com or 413.668.5094

N / S: South East Street

E / W: Belchertown Road (slip lane)

City, State: Amherst, Massachusetts

Client: PARE Corporation

File Name : PM Peak - South East @ Belchertown (slip)

Site Code : 11B

Start Date : 4/13/2022

Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	South East From North					Belchertown From East					South East From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	0	0	0	0	60	0	2	0	62	0	0	0	0	0	0	0	0	0	0	62
02:15 PM	0	0	0	0	0	70	0	1	1	72	0	0	0	0	0	0	0	0	0	0	72
02:30 PM	0	0	0	0	0	56	0	1	0	57	0	0	0	0	0	0	0	0	0	0	57
02:45 PM	0	0	0	0	0	60	0	2	0	62	0	0	0	0	0	0	0	0	0	0	62
Total	0	0	0	0	0	246	0	6	1	253	0	0	0	0	0	0	0	0	0	0	253
03:00 PM	0	0	0	0	0	38	0	1	0	39	0	0	0	0	0	0	0	0	0	0	39
03:15 PM	0	0	0	0	0	65	0	2	2	69	0	0	0	0	0	0	0	0	0	0	69
03:30 PM	0	0	0	0	0	74	0	1	2	77	0	0	0	0	0	0	0	0	0	0	77
03:45 PM	0	0	0	0	0	79	0	0	1	80	0	0	0	0	0	0	0	0	0	0	80
Total	0	0	0	0	0	256	0	4	5	265	0	0	0	0	0	0	0	0	0	0	265
04:00 PM	0	0	0	0	0	56	0	0	0	56	0	0	0	0	0	0	0	0	0	0	56
04:15 PM	0	0	0	0	0	62	0	0	1	63	0	0	0	0	0	0	0	0	0	0	63
04:30 PM	0	0	0	0	0	66	0	0	2	68	0	0	0	0	0	0	0	0	0	0	68
04:45 PM	0	0	0	0	0	74	0	4	0	78	0	0	0	0	0	0	0	0	0	0	78
Total	0	0	0	0	0	258	0	4	3	265	0	0	0	0	0	0	0	0	0	0	265
05:00 PM	0	0	0	0	0	60	0	0	4	64	0	0	0	0	0	0	0	0	0	0	64
05:15 PM	0	0	0	0	0	66	0	1	1	68	0	0	0	0	0	0	0	0	0	0	68
05:30 PM	0	0	0	0	0	51	0	1	2	54	0	0	0	0	0	0	0	0	0	0	54
05:45 PM	0	0	0	0	0	54	0	0	0	54	0	0	0	0	0	0	0	0	0	0	54
Total	0	0	0	0	0	231	0	2	7	240	0	0	0	0	0	0	0	0	0	0	240
Grand Total	0	0	0	0	0	991	0	16	16	1023	0	0	0	0	0	0	0	0	0	0	1023
Apprch %	0	0	0	0		96.9	0	1.6	1.6		0	0	0	0		0	0	0	0		
Total %	0	0	0	0	0	96.9	0	1.6	1.6	100	0	0	0	0	0	0	0	0	0	0	
PCs and Peds																					
% PCs and Peds	0	0	0	0	0	95.7	0	87.5	100	95.6	0	0	0	0	0	0	0	0	0	0	95.6
Heavy Vehicles	0	0	0	0	0	40	0	1	0	41	0	0	0	0	0	0	0	0	0	0	41
% Heavy Vehicles	0	0	0	0	0	4	0	6.2	0	4	0	0	0	0	0	0	0	0	0	0	4
Bicycles	0	0	0	0	0	3	0	1	0	4	0	0	0	0	0	0	0	0	0	0	4
% Bicycles	0	0	0	0	0	0.3	0	6.2	0	0.4	0	0	0	0	0	0	0	0	0	0	0.4

[illegible]

Innovative Data, LLC

P. O. Box 468

Belchertown, Massachusetts

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N / S: South East Street
E / W: Belchertown Road (slip lane)
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : PM Peak - South East @ Belchertown (slip)
Site Code : 11B
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

[illegible][illegible]



Innovative Data, LLC

P. O. Box 468
 Belchertown, Massachusetts
 InnovativeDataLLC.com or 413.668.5094

N / S: East Pleasant Street
 E / W: Clark Hill Road
 City, State: Amherst, Massachusetts
 Client: PARE Corporation

File Name : PM Peak - East Pleasant @ Clark Hill
 Site Code : 1
 Start Date : 4/13/2022
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	East Pleasant From North					From East					East Pleasant From South					Clark Hill From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	1	68	0	0	69	0	0	0	0	0	0	63	10	1	74	11	0	4	1	16	159
02:15 PM	1	65	0	0	66	0	0	0	0	0	0	62	7	0	69	15	0	3	0	18	153
02:30 PM	2	78	0	0	80	0	0	0	0	0	0	88	8	0	96	12	0	2	2	16	192
02:45 PM	4	67	0	0	71	0	0	0	0	0	0	48	7	0	55	15	0	4	0	19	145
Total	8	278	0	0	286	0	0	0	0	0	0	261	32	1	294	53	0	13	3	69	649
03:00 PM	6	105	0	0	111	0	0	0	0	0	0	62	9	0	71	24	0	4	0	28	210
03:15 PM	1	79	0	0	80	0	0	0	0	0	0	75	5	0	80	7	0	4	0	11	171
03:30 PM	3	98	0	0	101	0	0	0	0	0	0	91	11	0	102	4	0	1	0	5	208
03:45 PM	4	93	0	0	97	0	0	0	0	0	0	125	14	0	139	15	0	5	0	20	256
Total	14	375	0	0	389	0	0	0	0	0	0	353	39	0	392	50	0	14	0	64	845
04:00 PM	4	95	0	0	99	0	0	0	0	0	0	91	7	0	98	18	0	4	0	22	219
04:15 PM	3	84	0	0	87	0	0	0	0	0	0	92	9	0	101	12	0	3	2	17	205
04:30 PM	3	69	0	0	72	0	0	0	0	0	0	74	4	0	78	31	0	4	2	37	187
04:45 PM	1	78	1	0	80	1	0	1	0	2	0	84	6	1	91	28	0	3	3	34	207
Total	11	326	1	0	338	1	0	1	0	2	0	341	26	1	368	89	0	14	7	110	818
05:00 PM	5	106	0	1	112	0	0	0	0	0	0	86	13	0	99	20	0	6	1	27	238
05:15 PM	4	108	0	0	112	0	0	0	0	0	1	100	13	0	114	13	0	3	1	17	243
05:30 PM	0	85	0	0	85	0	0	0	0	0	0	92	8	0	100	14	0	3	2	19	204
05:45 PM	2	72	0	0	74	0	0	0	0	0	0	78	15	0	93	18	0	5	2	25	192
Total	11	371	0	1	383	0	0	0	0	0	1	356	49	0	406	65	0	17	6	88	877
Grand Total	44	1350	1	1	1396	1	0	1	0	2	1	1311	146	2	1460	257	0	58	16	331	3189
Apprch %	3.2	96.7	0.1	0.1		50	0	50	0		0.1	89.8	10	0.1		77.6	0	17.5	4.8		
Total %	1.4	42.3	0	0	43.8	0	0	0	0	0.1	0	41.1	4.6	0.1	45.8	8.1	0	1.8	0.5	10.4	
PCs and Peds	97.7	98.4	0	100	98.4	0	0	100	0	50	100	97.6	92.5	100	97.1	95.3	0	96.6	50	93.4	97.2
% PCs and Peds	1	20	1	0	22	1	0	0	0	1	0	24	11	0	35	11	0	2	0	13	71
Heavy Vehicles	2.3	1.5	100	0	1.6	100	0	0	0	50	0	1.8	7.5	0	2.4	4.3	0	3.4	0	3.9	2.2
% Heavy Vehicles	0	1	0	0	1	0	0	0	0	0	0	7	0	0	7	1	0	0	8	9	17
Bicycles	0	0.1	0	0	0.1	0	0	0	0	0	0	0.5	0	0	0.5	0.4	0	0	50	2.7	0.5
% Bicycles																					

	East Pleasant From North					From East					East Pleasant From South					Clark Hill From West						
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total	
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																						
Peak Hour for Entire Intersection Begins at 04:45 PM																						
04:45 PM	1	78	1	0	80	1	0	1	0	2	0	84	6	1	91	28	0	3	3	34	207	
05:00 PM	5	106	0	1	112	0	0	0	0	0	0	86	13	0	99	20	0	6	1	27	238	
05:15 PM	4	108	0	0	112	0	0	0	0	0	1	100	13	0	114	13	0	3	1	17	243	
05:30 PM	0	85	0	0	85	0	0	0	0	0	0	92	8	0	100	14	0	3	2	19	204	
Total Volume	10	377	1	1	389	1	0	1	0	2	1	362	40	1	404	75	0	15	7	97	892	
% App. Total	2.6	96.9	0.3	0.3		50	0	50	0		0.2	89.6	9.9	0.2		77.3	0	15.5	7.2			
PHF	.500	.873	.250	.250	.868	.250	.000	.250	.000	.250	.250	.905	.769	.250	.886	.670	.000	.625	.583	.713	.918	
PCs and Peds	10	376	0	1	387	0	0	1	0	1	1	357	38	1	397	72	0	15	4	91	876	
% PCs and Peds	100	99.7	0	100	99.5	0	0	100	0	50.0	100	98.6	95.0	100	98.3	96.0	0	100	57.1	93.8	98.2	
Heavy Vehicles	0	1	1	0	2	1	0	0	0	1	0	5	2	0	7	3	0	0	0	3	13	
% Heavy Vehicles	0	0.3	100	0	0.5	100	0	0	0	50.0	0	1.4	5.0	0	1.7	4.0	0	0	0	3.1	1.5	
Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3	3	
% Bicycles	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	42.9	3.1	0.3	



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: East Pleasant Street
E / W: Clark Hill Road
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : PM Peak - East Pleasant @ Clark Hill
Site Code : 1
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	East Pleasant From North					From East					East Pleasant From South					Clark Hill From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1
02:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	1	0	1	0	2	4
02:30 PM	0	1	0	0	1	0	0	0	0	0	0	8	1	0	9	1	0	0	0	1	11
02:45 PM	0	2	0	0	2	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	4
Total	0	4	0	0	4	0	0	0	0	0	0	10	3	0	13	2	0	1	0	3	20
03:00 PM	0	4	0	0	4	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	6
03:15 PM	1	2	0	0	3	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	5
03:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	3
03:45 PM	0	1	0	0	1	0	0	0	0	0	0	7	1	0	8	1	0	0	0	1	10
Total	1	8	0	0	9	0	0	0	0	0	0	8	3	0	11	3	0	1	0	4	24
04:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	3
04:15 PM	0	4	0	0	4	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	5
04:30 PM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	3
04:45 PM	0	0	1	0	1	1	0	0	0	1	0	0	0	0	0	1	0	0	0	1	3
Total	0	6	1	0	7	1	0	0	0	1	0	1	2	0	3	3	0	0	0	3	14
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	2	1	0	3	0	0	0	0	0	3
05:15 PM	0	1	0	0	1	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	4
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2	1	0	0	0	1	3
05:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	3
Total	0	2	0	0	2	0	0	0	0	0	0	5	3	0	8	3	0	0	0	3	13
Grand Total	1	20	1	0	22	1	0	0	0	1	0	24	11	0	35	11	0	2	0	13	71
Apprch %	4.5	90.9	4.5	0		100	0	0	0		0	68.6	31.4	0		84.6	0	15.4	0		
Total %	1.4	28.2	1.4	0	31	1.4	0	0	0	1.4	0	33.8	15.5	0	49.3	15.5	0	2.8	0	18.3	

	East Pleasant From North					From East					East Pleasant From South					Clark Hill From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:30 PM																					
02:30 PM	0	1	0	0	1	0	0	0	0	0	0	8	1	0	9	1	0	0	0	1	11
02:45 PM	0	2	0	0	2	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	4
03:00 PM	0	4	0	0	4	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	6
03:15 PM	1	2	0	0	3	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	5
Total Volume	1	9	0	0	10	0	0	0	0	0	0	10	3	0	13	3	0	0	0	3	26
% App. Total	10	90	0	0		0	0	0	0		0	76.9	23.1	0		100	0	0	0		
PHF	.250	.563	.000	.000	.625	.000	.000	.000	.000	.000	.000	.313	.750	.000	.361	.750	.000	.000	.000	.750	.591



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: East Pleasant Street
E / W: Strong Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : PM Peak - East Pleasant @ Strong
Site Code : 2
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	East Pleasant From North					Strong From East					East Pleasant From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	59	21	0	80	21	0	7	1	29	6	54	0	3	63	0	0	0	0	0	172
02:15 PM	0	52	27	0	79	17	0	9	1	27	19	53	0	4	76	0	0	0	0	0	182
02:30 PM	0	60	33	0	93	36	0	19	4	59	17	60	0	5	82	0	0	0	0	0	234
02:45 PM	0	61	23	0	84	18	0	18	1	37	13	39	0	9	61	0	0	0	0	0	182
Total	0	232	104	0	336	92	0	53	7	152	55	206	0	21	282	0	0	0	0	0	770
03:00 PM	0	74	54	0	128	14	0	22	0	36	9	58	0	5	72	0	0	0	0	0	236
03:15 PM	0	72	17	0	89	30	0	11	3	44	11	49	0	5	65	0	0	0	0	0	198
03:30 PM	0	75	27	0	102	24	0	9	1	34	7	79	0	6	92	0	0	0	0	0	228
03:45 PM	0	72	37	1	110	35	0	10	3	48	20	104	0	10	134	0	0	0	0	0	292
Total	0	293	135	1	429	103	0	52	7	162	47	290	0	26	363	0	0	0	0	0	954
04:00 PM	0	78	35	0	113	23	0	29	4	56	6	74	0	6	86	0	0	0	0	0	255
04:15 PM	0	69	31	0	100	21	0	10	5	36	15	82	0	5	102	0	0	0	0	0	238
04:30 PM	0	69	32	0	101	19	0	12	2	33	12	61	0	1	74	0	0	0	0	0	208
04:45 PM	0	72	35	0	107	17	0	9	4	30	8	74	0	4	86	0	0	0	0	0	223
Total	0	288	133	0	421	80	0	60	15	155	41	291	0	16	348	0	0	0	0	0	924
05:00 PM	0	84	44	0	128	17	0	12	2	31	10	83	0	1	94	0	0	0	0	0	253
05:15 PM	0	89	31	0	120	24	0	9	4	37	8	91	0	9	108	0	0	0	0	0	265
05:30 PM	0	68	32	0	100	32	0	10	2	44	9	73	0	3	85	0	0	0	0	0	229
05:45 PM	0	53	38	0	91	15	0	17	0	32	12	78	0	1	91	0	0	0	0	0	214
Total	0	294	145	0	439	88	0	48	8	144	39	325	0	14	378	0	0	0	0	0	961
Grand Total	0	1107	517	1	1625	363	0	213	37	613	182	1112	0	77	1371	0	0	0	0	0	3609
Apprch %	0	68.1	31.8	0.1		59.2	0	34.7	6		13.3	81.1	0	5.6		0	0	0	0		
Total %	0	30.7	14.3	0	45	10.1	0	5.9	1	17	5	30.8	0	2.1	38	0	0	0	0	0	
PCs and Peds																					
% PCs and Peds	0	96.9	97.9	100	97.2	96.1	0	94.8	100	95.9	94	96.3	0	100	96.2	0	0	0	0	0	96.6
Heavy Vehicles	0	22	10	0	32	9	0	7	0	16	10	29	0	0	39	0	0	0	0	0	87
% Heavy Vehicles	0	2	1.9	0	2	2.5	0	3.3	0	2.6	5.5	2.6	0	0	2.8	0	0	0	0	0	2.4
Bicycles	0	12	1	0	13	5	0	4	0	9	1	12	0	0	13	0	0	0	0	0	35
% Bicycles	0	1.1	0.2	0	0.8	1.4	0	1.9	0	1.5	0.5	1.1	0	0	0.9	0	0	0	0	0	1

	East Pleasant From North					Strong From East					East Pleasant From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:30 PM																					
03:30 PM	0	75	27	0	102	24	0	9	1	34	7	79	0	6	92	0	0	0	0	0	228
03:45 PM	0	72	37	1	110	35	0	10	3	48	20	104	0	10	134	0	0	0	0	0	292
04:00 PM	0	78	35	0	113	23	0	29	4	56	6	74	0	6	86	0	0	0	0	0	255
04:15 PM	0	69	31	0	100	21	0	10	5	36	15	82	0	5	102	0	0	0	0	0	238
Total Volume	0	294	130	1	425	103	0	58	13	174	48	339	0	27	414	0	0	0	0	0	1013
% App. Total	0	69.2	30.6	0.2		59.2	0	33.3	7.5		11.6	81.9	0	6.5		0	0	0	0		
PHF	.000	.942	.878	.250	.940	.736	.000	.500	.650	.777	.600	.815	.000	.675	.772	.000	.000	.000	.000	.000	.867



Innovative Data, LLC

P. O. Box 468
 Belchertown, Massachusetts
 InnovativeDataLLC.com or 413.668.5094

N / S: East Pleasant Street
 E / W: Strong Street
 City, State: Amherst, Massachusetts
 Client: PARE Corporation

File Name : PM Peak - East Pleasant @ Strong
 Site Code : 2
 Start Date : 4/13/2022
 Page No : 1

Groups Printed- Heavy Vehicles

	East Pleasant From North					Strong From East					East Pleasant From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	0	1	0	1	0	0	0	0	0	2	2	0	0	4	0	0	0	0	0	5
02:15 PM	0	1	1	0	2	0	0	1	0	1	5	2	0	0	7	0	0	0	0	0	10
02:30 PM	0	2	0	0	2	6	0	1	0	7	1	2	0	0	3	0	0	0	0	0	12
02:45 PM	0	1	1	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5
Total	0	4	3	0	7	6	0	2	0	8	8	9	0	0	17	0	0	0	0	0	32
03:00 PM	0	2	3	0	5	0	0	2	0	2	1	1	0	0	2	0	0	0	0	0	9
03:15 PM	0	1	2	0	3	1	0	1	0	2	0	0	0	0	0	0	0	0	0	0	5
03:30 PM	0	0	1	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
03:45 PM	0	2	0	0	2	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	9
Total	0	5	6	0	11	1	0	3	0	4	1	9	0	0	10	0	0	0	0	0	25
04:00 PM	0	2	0	0	2	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	4
04:15 PM	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	5
04:30 PM	0	2	0	0	2	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	4
04:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	0	9	0	0	9	1	0	1	0	2	0	3	0	0	3	0	0	0	0	0	14
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	3
05:15 PM	0	2	0	0	2	0	0	0	0	0	1	2	0	0	3	0	0	0	0	0	5
05:30 PM	0	1	0	0	1	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	3
05:45 PM	0	1	1	0	2	0	0	1	0	1	0	2	0	0	2	0	0	0	0	0	5
Total	0	4	1	0	5	1	0	1	0	2	1	8	0	0	9	0	0	0	0	0	16
Grand Total	0	22	10	0	32	9	0	7	0	16	10	29	0	0	39	0	0	0	0	0	87
Apprch %	0	68.8	31.2	0		56.2	0	43.8	0		25.6	74.4	0	0		0	0	0	0		
Total %	0	25.3	11.5	0	36.8	10.3	0	8	0	18.4	11.5	33.3	0	0	44.8	0	0	0	0	0	

	East Pleasant From North					Strong From East					East Pleasant From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:15 PM																					
02:15 PM	0	1	1	0	2	0	0	1	0	1	5	2	0	0	7	0	0	0	0	0	10
02:30 PM	0	2	0	0	2	6	0	1	0	7	1	2	0	0	3	0	0	0	0	0	12
02:45 PM	0	1	1	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5
03:00 PM	0	2	3	0	5	0	0	2	0	2	1	1	0	0	2	0	0	0	0	0	9
Total Volume	0	6	5	0	11	6	0	4	0	10	7	8	0	0	15	0	0	0	0	0	36
% App. Total	0	54.5	45.5	0		60	0	40	0		46.7	53.3	0	0		0	0	0	0		
PHF	.000	.750	.417	.000	.550	.250	.000	.500	.000	.357	.350	.667	.000	.000	.536	.000	.000	.000	.000	.000	.750



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
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N / S: North & South East
E / W: Main Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : PM Peak - Main @ North & South East
Site Code : 10
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	North East From North					Main From East					South East From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	6	51	3	0	60	9	39	11	0	59	13	43	39	1	96	44	46	10	0	100	315
02:15 PM	6	41	6	1	54	11	35	9	1	56	13	31	49	3	96	41	38	10	0	89	295
02:30 PM	6	46	17	3	72	7	34	15	3	59	23	46	47	5	121	43	39	7	0	89	341
02:45 PM	7	54	15	4	80	9	33	16	6	64	18	42	46	2	108	42	55	11	3	111	363
Total	25	192	41	8	266	36	141	51	10	238	67	162	181	11	421	170	178	38	3	389	1314
03:00 PM	7	69	11	0	87	5	32	12	1	50	22	33	36	0	91	53	51	10	2	116	344
03:15 PM	8	58	14	0	80	9	47	22	0	78	22	43	43	1	109	46	50	3	2	101	368
03:30 PM	6	58	6	2	72	14	54	16	2	86	21	45	61	1	128	54	60	11	2	127	413
03:45 PM	9	66	17	1	93	11	47	11	2	71	34	51	53	2	140	70	60	11	1	142	446
Total	30	251	48	3	332	39	180	61	5	285	99	172	193	4	468	223	221	35	7	486	1571
04:00 PM	10	65	13	1	89	4	29	15	3	51	19	35	43	5	102	66	62	22	1	151	393
04:15 PM	8	64	14	0	86	9	41	24	0	74	24	49	46	0	119	55	66	12	1	134	413
04:30 PM	6	61	13	2	82	10	31	3	2	46	27	43	43	7	120	42	69	4	4	119	367
04:45 PM	11	56	13	2	82	9	43	18	2	72	25	58	36	2	121	59	74	9	4	146	421
Total	35	246	53	5	339	32	144	60	7	243	95	185	168	14	462	222	271	47	10	550	1594
05:00 PM	6	69	11	0	86	14	39	14	0	67	23	52	43	0	118	55	55	10	0	120	391
05:15 PM	4	61	8	0	73	9	42	14	0	65	29	45	40	0	114	76	56	10	0	142	394
05:30 PM	11	55	13	0	79	14	43	10	0	67	24	40	45	4	113	62	58	6	2	128	387
05:45 PM	9	58	13	2	82	10	42	12	1	65	22	47	40	3	112	43	49	15	2	109	368
Total	30	243	45	2	320	47	166	50	1	264	98	184	168	7	457	236	218	41	4	499	1540
Grand Total	120	932	187	18	1257	154	631	222	23	1030	359	703	710	36	1808	851	888	161	24	1924	6019
Apprch %	9.5	74.1	14.9	1.4		15	61.3	21.6	2.2		19.9	38.9	39.3	2		44.2	46.2	8.4	1.2		
Total %	2	15.5	3.1	0.3	20.9	2.6	10.5	3.7	0.4	17.1	6	11.7	11.8	0.6	30	14.1	14.8	2.7	0.4	32	
PCs and Peds	99.2	98.2	98.9	100	98.4	94.8	96.4	99.5	100	96.9	97.8	96.4	96.2	100	96.7	96	97.5	96.3	100	96.8	97.1
% PCs and Peds	99.2	98.2	98.9	100	98.4	94.8	96.4	99.5	100	96.9	97.8	96.4	96.2	100	96.7	96	97.5	96.3	100	96.8	97.1
Heavy Vehicles	0	16	1	0	17	6	17	1	0	24	7	23	27	0	57	32	13	3	0	48	146
% Heavy Vehicles	0	1.7	0.5	0	1.4	3.9	2.7	0.5	0	2.3	1.9	3.3	3.8	0	3.2	3.8	1.5	1.9	0	2.5	2.4
Bicycles	1	1	1	0	3	2	6	0	0	8	1	2	0	0	3	2	9	3	0	14	28
% Bicycles	0.8	0.1	0.5	0	0.2	1.3	1	0	0	0.8	0.3	0.3	0	0	0.2	0.2	1	1.9	0	0.7	0.5

	North East From North					Main From East					South East From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:30 PM																					
03:30 PM	6	58	6	2	72	14	54	16	2	86	21	45	61	1	128	54	60	11	2	127	413
03:45 PM	9	66	17	1	93	11	47	11	2	71	34	51	53	2	140	70	60	11	1	142	446
04:00 PM	10	65	13	1	89	4	29	15	3	51	19	35	43	5	102	66	62	22	1	151	393
04:15 PM	8	64	14	0	86	9	41	24	0	74	24	49	46	0	119	55	66	12	1	134	413
Total Volume	33	253	50	4	340	38	171	66	7	282	98	180	203	8	489	245	248	56	5	554	1665
% App. Total	9.7	74.4	14.7	1.2		13.5	60.6	23.4	2.5		20	36.8	41.5	1.6		44.2	44.8	10.1	0.9		
PHF	.825	.958	.735	.500	.914	.679	.792	.688	.583	.820	.721	.882	.832	.400	.873	.875	.939	.636	.625	.917	.933



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: North & South East
E / W: Main Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : PM Peak - Main @ North & South East
Site Code : 10
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	North East From North					Main From East					South East From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	1	0	0	1	0	1	0	0	1	1	2	1	0	4	1	0	0	0	1	7
02:15 PM	0	2	0	0	2	3	0	0	0	3	0	2	4	0	6	5	1	0	0	6	17
02:30 PM	0	0	0	0	0	0	0	0	0	0	2	5	2	0	9	4	1	0	0	5	14
02:45 PM	0	1	1	0	2	1	0	0	0	1	0	2	0	0	2	1	2	0	0	3	8
Total	0	4	1	0	5	4	1	0	0	5	3	11	7	0	21	11	4	0	0	15	46
03:00 PM	0	1	0	0	1	0	5	0	0	5	0	0	5	0	5	1	0	0	0	1	12
03:15 PM	0	1	0	0	1	1	1	0	0	2	1	4	4	0	9	1	0	0	0	1	13
03:30 PM	0	1	0	0	1	0	2	0	0	2	0	0	1	0	1	2	0	0	0	2	6
03:45 PM	0	2	0	0	2	0	1	0	0	1	0	1	0	0	1	7	5	1	0	13	17
Total	0	5	0	0	5	1	9	0	0	10	1	5	10	0	16	11	5	1	0	17	48
04:00 PM	0	1	0	0	1	1	0	0	0	1	0	1	1	0	2	1	0	2	0	3	7
04:15 PM	0	3	0	0	3	0	1	1	0	2	0	1	4	0	5	1	0	0	0	1	11
04:30 PM	0	0	0	0	0	0	3	0	0	3	0	0	2	0	2	1	2	0	0	3	8
04:45 PM	0	0	0	0	0	0	1	0	0	1	1	3	0	0	4	1	1	0	0	2	7
Total	0	4	0	0	4	1	5	1	0	7	1	5	7	0	13	4	3	2	0	9	33
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	2	0	0	0	2	4
05:15 PM	0	2	0	0	2	0	2	0	0	2	0	0	1	0	1	0	0	0	0	0	5
05:30 PM	0	0	0	0	0	0	0	0	0	0	2	0	1	0	3	2	0	0	0	2	5
05:45 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2	1	0	0	3	5
Total	0	3	0	0	3	0	2	0	0	2	2	2	3	0	7	6	1	0	0	7	19
Grand Total	0	16	1	0	17	6	17	1	0	24	7	23	27	0	57	32	13	3	0	48	146
Apprch %	0	94.1	5.9	0		25	70.8	4.2	0		12.3	40.4	47.4	0		66.7	27.1	6.2	0		
Total %	0	11	0.7	0	11.6	4.1	11.6	0.7	0	16.4	4.8	15.8	18.5	0	39	21.9	8.9	2.1	0	32.9	

	North East From North					Main From East					South East From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:15 PM																					
02:15 PM	0	2	0	0	2	3	0	0	0	3	0	2	4	0	6	5	1	0	0	6	17
02:30 PM	0	0	0	0	0	0	0	0	0	0	2	5	2	0	9	4	1	0	0	5	14
02:45 PM	0	1	1	0	2	1	0	0	0	1	0	2	0	0	2	1	2	0	0	3	8
03:00 PM	0	1	0	0	1	0	5	0	0	5	0	0	5	0	5	1	0	0	0	1	12
Total Volume	0	4	1	0	5	4	5	0	0	9	2	9	11	0	22	11	4	0	0	15	51
% App. Total	0	80	20	0		44.4	55.6	0	0		9.1	40.9	50	0		73.3	26.7	0	0		
PHF	.000	.500	.250	.000	.625	.333	.250	.000	.000	.450	.250	.450	.550	.000	.611	.550	.500	.000	.000	.625	.750



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P. O. Box 468
Belchertown, Massachusetts
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N / S: North & South Whitney
E / W: Main Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : PM Peak - Main @ North & South Whitney
Site Code : 9
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	North Whitney From North					Main From East					South Whitney From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	0	2	1	3	0	83	3	1	87	6	3	12	3	24	10	121	5	2	138	252
02:15 PM	7	2	1	5	15	0	101	5	0	106	7	2	7	6	22	7	106	3	0	116	259
02:30 PM	4	2	2	5	13	3	76	3	0	82	4	5	7	4	20	9	94	2	0	105	220
02:45 PM	4	3	2	2	11	3	85	11	0	99	6	0	5	6	17	11	119	2	0	132	259
Total	15	7	7	13	42	6	345	22	1	374	23	10	31	19	83	37	440	12	2	491	990
03:00 PM	4	1	2	5	12	2	79	3	0	84	8	2	8	1	19	6	147	3	0	156	271
03:15 PM	1	3	1	6	11	2	102	6	0	110	2	3	7	1	13	10	112	5	0	127	261
03:30 PM	4	0	3	1	8	3	134	5	0	142	10	3	8	3	24	10	128	0	2	140	314
03:45 PM	5	0	0	5	10	2	107	9	0	118	7	4	8	2	21	18	162	3	0	183	332
Total	14	4	6	17	41	9	422	23	0	454	27	12	31	7	77	44	549	11	2	606	1178
04:00 PM	5	4	2	9	20	2	98	4	0	104	20	2	11	1	34	19	171	2	0	192	350
04:15 PM	2	0	1	6	9	0	111	4	0	115	12	1	7	0	20	9	144	3	0	156	300
04:30 PM	0	0	1	3	4	1	87	6	0	94	8	5	3	1	17	12	124	2	1	139	254
04:45 PM	3	2	3	3	11	1	105	5	0	111	9	2	6	3	20	17	152	1	0	170	312
Total	10	6	7	21	44	4	401	19	0	424	49	10	27	5	91	57	591	8	1	657	1216
05:00 PM	1	2	2	8	13	2	95	6	0	103	7	2	7	2	18	15	139	1	0	155	289
05:15 PM	1	2	2	4	9	1	110	1	0	112	6	1	5	3	15	19	146	2	0	167	303
05:30 PM	1	3	1	4	9	0	106	4	0	110	6	3	9	3	21	5	163	4	0	172	312
05:45 PM	2	0	3	6	11	2	97	7	0	106	8	5	8	6	27	11	130	3	0	144	288
Total	5	7	8	22	42	5	408	18	0	431	27	11	29	14	81	50	578	10	0	638	1192
Grand Total	44	24	28	73	169	24	1576	82	1	1683	126	43	118	45	332	188	2158	41	5	2392	4576
Apprch %	26	14.2	16.6	43.2		1.4	93.6	4.9	0.1		38	13	35.5	13.6		7.9	90.2	1.7	0.2		
Total %	1	0.5	0.6	1.6	3.7	0.5	34.4	1.8	0	36.8	2.8	0.9	2.6	1	7.3	4.1	47.2	0.9	0.1	52.3	
PCs and Peds	42	23	27	72	164	22	1513	75	0	1610	120	42	116	44	322	186	2059	40	4	2289	4385
% PCs and Peds	95.5	95.8	96.4	98.6	97	91.7	96	91.5	0	95.7	95.2	97.7	98.3	97.8	97	98.9	95.4	97.6	80	95.7	95.8
Heavy Vehicles	2	1	1	1	5	1	59	7	0	67	5	1	2	0	8	2	76	1	0	79	159
% Heavy Vehicles	4.5	4.2	3.6	1.4	3	4.2	3.7	8.5	0	4	4	2.3	1.7	0	2.4	1.1	3.5	2.4	0	3.3	3.5
Bicycles	0	0	0	0	0	1	4	0	1	6	1	0	0	1	2	0	23	0	1	24	32
% Bicycles	0	0	0	0	0	4.2	0.3	0	100	0.4	0.8	0	0	2.2	0.6	0	1.1	0	20	1	0.7

	North Whitney From North					Main From East					South Whitney From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:30 PM																					
03:30 PM	4	0	3	1	8	3	134	5	0	142	10	3	8	3	24	10	128	0	2	140	314
03:45 PM	5	0	0	5	10	2	107	9	0	118	7	4	8	2	21	18	162	3	0	183	332
04:00 PM	5	4	2	9	20	2	98	4	0	104	20	2	11	1	34	19	171	2	0	192	350
04:15 PM	2	0	1	6	9	0	111	4	0	115	12	1	7	0	20	9	144	3	0	156	300
Total Volume	16	4	6	21	47	7	450	22	0	479	49	10	34	6	99	56	605	8	2	671	1296
% App. Total	34	8.5	12.8	44.7		1.5	93.9	4.6	0		49.5	10.1	34.3	6.1		8.3	90.2	1.2	0.3		
PHF	.800	.250	.500	.583	.588	.583	.840	.611	.000	.843	.613	.625	.773	.500	.728	.737	.885	.667	.250	.874	.926



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Belchertown, Massachusetts
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N / S: North & South Whitney
E / W: Main Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : PM Peak - Main @ North & South Whitney
Site Code : 9
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	North Whitney From North					Main From East					South Whitney From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	0	0	1	1	0	0	0	0	0	0	0	1	0	1	0	3	0	0	3	5
02:15 PM	1	0	0	0	1	0	7	0	0	7	0	0	1	0	0	0	7	0	0	7	15
02:30 PM	0	0	0	0	0	1	2	0	0	3	0	1	0	0	1	0	6	0	0	6	10
02:45 PM	0	0	1	0	1	0	1	1	0	2	0	0	0	0	0	0	5	0	0	5	8
Total	1	0	1	1	3	1	10	1	0	12	0	1	1	0	2	0	21	0	0	21	38
03:00 PM	0	0	0	0	0	0	12	0	0	12	3	0	0	0	3	0	7	1	0	8	23
03:15 PM	0	1	0	0	1	0	6	0	0	6	0	0	1	0	1	0	3	0	0	3	11
03:30 PM	0	0	0	0	0	0	4	1	0	5	1	0	0	0	1	0	2	0	0	2	8
03:45 PM	1	0	0	0	1	0	1	4	0	5	0	0	0	0	0	1	19	0	0	20	26
Total	1	1	0	0	2	0	23	5	0	28	4	0	1	0	5	1	31	1	0	33	68
04:00 PM	0	0	0	0	0	0	4	0	0	4	1	0	0	0	1	0	3	0	0	3	8
04:15 PM	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	0	5	0	0	5	12
04:30 PM	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	1	5	0	0	6	11
04:45 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	2	0	0	2	6
Total	0	0	0	0	0	0	20	0	0	20	1	0	0	0	1	1	15	0	0	16	37
05:00 PM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	2	0	0	2	4
05:15 PM	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	0	0	0	0	0	4
05:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	0	0	3	4
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	4	4
Total	0	0	0	0	0	0	6	1	0	7	0	0	0	0	0	0	9	0	0	9	16
Grand Total	2	1	1	1	5	1	59	7	0	67	5	1	2	0	8	2	76	1	0	79	159
Apprch %	40	20	20	20		1.5	88.1	10.4	0		62.5	12.5	25	0		2.5	96.2	1.3	0		
Total %	1.3	0.6	0.6	0.6	3.1	0.6	37.1	4.4	0	42.1	3.1	0.6	1.3	0	5	1.3	47.8	0.6	0	49.7	

	North Whitney From North					Main From East					South Whitney From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	0	0	0	0	0	12	0	0	12	3	0	0	0	3	0	7	1	0	8	23
03:15 PM	0	1	0	0	1	0	6	0	0	6	0	0	1	0	1	0	3	0	0	3	11
03:30 PM	0	0	0	0	0	0	4	1	0	5	1	0	0	0	1	0	2	0	0	2	8
03:45 PM	1	0	0	0	1	0	1	4	0	5	0	0	0	0	0	1	19	0	0	20	26
Total Volume	1	1	0	0	2	0	23	5	0	28	4	0	1	0	5	1	31	1	0	33	68
% App. Total	50	50	0	0		0	82.1	17.9	0		80	0	20	0		3	93.9	3	0		
PHF	.250	.250	.000	.000	.500	.000	.479	.313	.000	.583	.333	.000	.250	.000	.417	.250	.408	.250	.000	.413	.654



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N / S: Triangle & Dickinson
 E / W: Main Street
 City, State: Amherst, Massachusetts
 Client: PARE Corporation

File Name : PM Peak - Main @ Triangle & Dickinson
 Site Code : 8
 Start Date : 4/13/2022
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	Triangle From North					Main From East					Dickinson From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	3	7	86	1	97	61	52	2	2	117	3	2	4	1	10	1	53	3	0	57	281
02:15 PM	2	8	65	5	80	60	50	1	1	112	2	8	3	3	16	3	53	4	0	60	268
02:30 PM	4	3	64	6	77	36	41	2	2	81	6	3	5	3	17	3	41	4	0	48	223
02:45 PM	5	12	59	1	77	45	57	6	3	111	1	1	4	2	8	2	63	3	0	68	264
Total	14	30	274	13	331	202	200	11	8	421	12	14	16	9	51	9	210	14	0	233	1036
03:00 PM	5	2	95	0	102	44	43	1	4	92	3	7	2	2	14	1	67	7	0	75	283
03:15 PM	9	7	76	4	96	45	51	2	1	99	3	5	0	1	9	1	50	10	1	62	266
03:30 PM	9	6	81	1	97	72	60	3	2	137	4	13	2	2	21	1	51	7	2	61	316
03:45 PM	12	8	82	2	104	58	65	5	8	136	3	11	5	6	25	0	60	7	4	71	336
Total	35	23	334	7	399	219	219	11	15	464	13	36	9	11	69	3	228	31	7	269	1201
04:00 PM	7	2	105	0	114	53	68	3	6	130	5	3	3	0	11	3	68	1	3	75	330
04:15 PM	3	4	60	0	67	60	63	3	3	129	3	6	1	0	10	0	73	7	1	81	287
04:30 PM	7	4	74	0	85	33	53	1	7	94	5	6	2	0	13	3	65	6	2	76	268
04:45 PM	3	5	86	0	94	58	65	2	7	132	6	5	2	0	13	1	83	11	1	96	335
Total	20	15	325	0	360	204	249	9	23	485	19	20	8	0	47	7	289	25	7	328	1220
05:00 PM	4	3	100	0	107	53	56	0	10	119	4	8	1	0	13	1	65	3	3	72	311
05:15 PM	6	9	116	0	131	61	50	2	5	118	8	4	2	0	14	1	44	6	0	51	314
05:30 PM	4	6	95	0	105	74	49	1	4	128	7	9	2	0	18	0	57	4	7	68	319
05:45 PM	1	4	70	0	75	52	44	1	4	101	0	4	0	0	4	0	30	3	7	40	220
Total	15	22	381	0	418	240	199	4	23	466	19	25	5	0	49	2	196	16	17	231	1164
Grand Total	84	90	1314	20	1508	865	867	35	69	1836	63	95	38	20	216	21	923	86	31	1061	4621
Apprch %	5.6	6	87.1	1.3		47.1	47.2	1.9	3.8		29.2	44	17.6	9.3		2	87	8.1	2.9		
Total %	1.8	1.9	28.4	0.4	32.6	18.7	18.8	0.8	1.5	39.7	1.4	2.1	0.8	0.4	4.7	0.5	20	1.9	0.7	23	
PCs and Peds																					
% PCs and Peds	97.6	94.4	98.3	100	98.1	98.7	95.3	97.1	100	97.1	96.8	100	97.4	100	98.6	100	95.6	97.7	83.9	95.5	97.1
Heavy Vehicles	2	0	11	0	13	4	27	1	0	32	0	0	1	0	1	0	30	2	0	32	78
% Heavy Vehicles	2.4	0	0.8	0	0.9	0.5	3.1	2.9	0	1.7	0	0	2.6	0	0.5	0	3.3	2.3	0	3	1.7
Bicycles	0	5	11	0	16	7	14	0	0	21	2	0	0	0	2	0	11	0	5	16	55
% Bicycles	0	5.6	0.8	0	1.1	0.8	1.6	0	0	1.1	3.2	0	0	0	0.9	0	1.2	0	16.1	1.5	1.2

	Triangle From North					Main From East					Dickinson From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	3	5	86	0	94	58	65	2	7	132	6	5	2	0	13	1	83	11	1	96	335
05:00 PM	4	3	100	0	107	53	56	0	10	119	4	8	1	0	13	1	65	3	3	72	311
05:15 PM	6	9	116	0	131	61	50	2	5	118	8	4	2	0	14	1	44	6	0	51	314
05:30 PM	4	6	95	0	105	74	49	1	4	128	7	9	2	0	18	0	57	4	7	68	319
Total Volume	17	23	397	0	437	246	220	5	26	497	25	26	7	0	58	3	249	24	11	287	1279
% App. Total	3.9	5.3	90.8	0		49.5	44.3	1	5.2		43.1	44.8	12.1	0		1	86.8	8.4	3.8		
PHF	.708	.639	.856	.000	.834	.831	.846	.625	.650	.941	.781	.722	.875	.000	.806	.750	.750	.545	.393	.747	.954



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: Triangle & Dickinson
E / W: Main Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : PM Peak - Main @ Triangle & Dickinson
Site Code : 8
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	Triangle From North					Main From East					Dickinson From South					Main From West						
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total	
02:00 PM	0	0	1	0	1	1	1	0	0	2	0	0	1	0	1	0	4	0	0	0	4	8
02:15 PM	0	0	0	0	0	2	3	0	0	5	0	0	0	0	0	0	1	0	0	0	1	6
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	3
02:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	1	0	0	5	7
Total	0	0	1	0	1	3	6	0	0	9	0	0	1	0	1	0	12	1	0	0	13	24
03:00 PM	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	0	2	0	0	0	2	6
03:15 PM	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	0	2	0	0	0	2	4
03:30 PM	0	0	2	0	2	0	2	0	0	2	0	0	0	0	0	0	1	0	0	0	1	5
03:45 PM	2	0	4	0	6	0	1	0	0	1	0	0	0	0	0	0	2	0	0	0	2	9
Total	2	0	7	0	9	1	7	0	0	8	0	0	0	0	0	0	7	0	0	0	7	24
04:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	0	1	3
04:15 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	0	1	4
04:30 PM	0	0	2	0	2	0	4	1	0	5	0	0	0	0	0	0	1	0	0	0	1	8
04:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	3	1	0	0	4	5
Total	0	0	2	0	2	0	10	1	0	11	0	0	0	0	0	0	6	1	0	0	7	20
05:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	2
05:15 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
05:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2	0	0	0	2	3
05:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	2	3
Total	0	0	1	0	1	0	4	0	0	4	0	0	0	0	0	0	5	0	0	0	5	10
Grand Total	2	0	11	0	13	4	27	1	0	32	0	0	1	0	1	0	30	2	0	0	32	78
Apprch %	15.4	0	84.6	0		12.5	84.4	3.1	0		0	0	100	0		0	93.8	6.2	0			
Total %	2.6	0	14.1	0	16.7	5.1	34.6	1.3	0	41	0	0	1.3	0	1.3	0	38.5	2.6	0		41	

	Triangle From North					Main From East					Dickinson From South					Main From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:00 PM																					
02:00 PM	0	0	1	0	1	1	1	0	0	2	0	0	1	0	1	0	4	0	0	4	8
02:15 PM	0	0	0	0	0	2	3	0	0	5	0	0	0	0	0	0	1	0	0	1	6
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	3	3
02:45 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	4	1	0	5	7
Total Volume	0	0	1	0	1	3	6	0	0	9	0	0	1	0	1	0	12	1	0	13	24
% App. Total	0	0	100	0		33.3	66.7	0	0		0	0	100	0		0	92.3	7.7	0		
PHF	.000	.000	.250	.000	.250	.375	.500	.000	.000	.450	.000	.000	.250	.000	.250	.000	.750	.250	.000	.650	.750



Innovative Data, LLC

P. O. Box 468
 Belchertown, Massachusetts
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N / S: North East Street
 E / W: Strong Street
 City, State: Amherst, Massachusetts
 Client: PARE Corporation

File Name : PM Peak - North East @ Strong
 Site Code : 7
 Start Date : 4/13/2022
 Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	North East From North					From East					North East From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	3	26	0	1	30	0	0	0	0	0	0	24	27	0	51	25	0	1	1	27	108
02:15 PM	5	40	0	0	45	0	0	0	0	0	0	31	19	0	50	19	0	1	0	20	115
02:30 PM	0	35	0	0	35	0	0	0	0	0	0	40	17	0	57	28	0	5	0	33	125
02:45 PM	2	44	0	0	46	0	0	0	0	0	0	40	16	0	56	27	0	2	0	29	131
Total	10	145	0	1	156	0	0	0	0	0	0	135	79	0	214	99	0	9	1	109	479
03:00 PM	3	37	1	0	41	0	0	0	0	0	1	20	9	0	30	36	0	0	0	36	107
03:15 PM	3	33	0	0	36	0	0	0	0	0	0	30	17	0	47	18	0	3	0	21	104
03:30 PM	2	44	0	0	46	0	0	0	0	0	0	33	26	0	59	19	0	1	0	20	125
03:45 PM	4	27	0	0	31	0	0	0	0	0	0	34	16	0	50	26	0	2	0	28	109
Total	12	141	1	0	154	0	0	0	0	0	1	117	68	0	186	99	0	6	0	105	445
04:00 PM	0	25	0	0	25	0	0	0	0	0	0	20	11	0	31	36	0	4	0	40	96
04:15 PM	5	27	0	0	32	0	0	0	0	0	0	31	13	0	44	22	0	1	0	23	99
04:30 PM	2	41	0	0	43	0	0	0	0	0	0	30	13	0	43	27	0	1	0	28	114
04:45 PM	1	23	0	0	24	0	0	0	0	0	0	26	11	0	37	22	0	1	0	23	84
Total	8	116	0	0	124	0	0	0	0	0	0	107	48	0	155	107	0	7	0	114	393
05:00 PM	3	35	0	0	38	0	0	0	0	0	0	36	18	0	54	26	0	4	0	30	122
05:15 PM	1	36	0	0	37	0	0	0	0	0	0	35	26	0	61	23	0	1	0	24	122
05:30 PM	5	35	0	0	40	0	0	0	0	0	0	30	18	0	48	35	0	4	0	39	127
05:45 PM	2	28	0	0	30	0	0	0	0	0	0	48	13	0	61	36	0	4	0	40	131
Total	11	134	0	0	145	0	0	0	0	0	0	149	75	0	224	120	0	13	0	133	502
Grand Total	41	536	1	1	579	0	0	0	0	0	1	508	270	0	779	425	0	35	1	461	1819
Apprch %	7.1	92.6	0.2	0.2		0	0	0	0		0.1	65.2	34.7	0		92.2	0	7.6	0.2		
Total %	2.3	29.5	0.1	0.1	31.8	0	0	0	0	0	0.1	27.9	14.8	0	42.8	23.4	0	1.9	0.1	25.3	
PCs and Peds																					
% PCs and Peds	90.2	98.5	100	100	97.9	0	0	0	0	0	100	96.3	97.8	0	96.8	98.8	0	97.1	100	98.7	97.6
Heavy Vehicles	1	6	0	0	7	0	0	0	0	0	0	12	6	0	18	4	0	0	0	4	29
% Heavy Vehicles	2.4	1.1	0	0	1.2	0	0	0	0	0	0	2.4	2.2	0	2.3	0.9	0	0	0	0.9	1.6
Bicycles	3	2	0	0	5	0	0	0	0	0	0	7	0	0	7	1	0	1	0	2	14
% Bicycles	7.3	0.4	0	0	0.9	0	0	0	0	0	0	1.4	0	0	0.9	0.2	0	2.9	0	0.4	0.8

	North East From North					From East					North East From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	3	35	0	0	38	0	0	0	0	0	0	36	18	0	54	26	0	4	0	30	122
05:15 PM	1	36	0	0	37	0	0	0	0	0	0	35	26	0	61	23	0	1	0	24	122
05:30 PM	5	35	0	0	40	0	0	0	0	0	0	30	18	0	48	35	0	4	0	39	127
05:45 PM	2	28	0	0	30	0	0	0	0	0	0	48	13	0	61	36	0	4	0	40	131
Total Volume	11	134	0	0	145	0	0	0	0	0	0	149	75	0	224	120	0	13	0	133	502
% App. Total	7.6	92.4	0	0		0	0	0	0		0	66.5	33.5	0		90.2	0	9.8	0		
PHF	.550	.931	.000	.000	.906	.000	.000	.000	.000	.000	.000	.776	.721	.000	.918	.833	.000	.813	.000	.831	.958



Innovative Data, LLC

P. O. Box 468
 Belchertown, Massachusetts
 InnovativeDataLLC.com or 413.668.5094

N / S: North East Street
 E / W: Strong Street
 City, State: Amherst, Massachusetts
 Client: PARE Corporation

File Name : PM Peak - North East @ Strong
 Site Code : 7
 Start Date : 4/13/2022
 Page No : 1

Groups Printed- Heavy Vehicles

	North East From North					From East					North East From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4	1	0	0	0	1	5
02:30 PM	0	1	0	0	1	0	0	0	0	0	0	5	2	0	7	0	0	0	0	0	8
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	2
Total	0	2	0	0	2	0	0	0	0	0	0	10	3	0	13	2	0	0	0	2	17
03:00 PM	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	3
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1
Total	1	2	0	0	3	0	0	0	0	0	0	1	1	0	2	1	0	0	0	1	6
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	2
04:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	3
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	1	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	3
Grand Total	1	6	0	0	7	0	0	0	0	0	0	12	6	0	18	4	0	0	0	4	29
Apprch %	14.3	85.7	0	0		0	0	0	0		0	66.7	33.3	0		100	0	0	0		
Total %	3.4	20.7	0	0	24.1	0	0	0	0	0	0	41.4	20.7	0	62.1	13.8	0	0	0	13.8	

	North East From North					From East					North East From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:15 PM																					
02:15 PM	0	0	0	0	0	0	0	0	0	0	0	3	1	0	4	1	0	0	0	1	5
02:30 PM	0	1	0	0	1	0	0	0	0	0	0	5	2	0	7	0	0	0	0	0	8
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	1	2
03:00 PM	1	0	0	0	1	0	0	0	0	0	0	0	1	0	1	1	0	0	0	1	3
Total Volume	1	1	0	0	2	0	0	0	0	0	0	9	4	0	13	3	0	0	0	3	18
% App. Total	50	50	0	0		0	0	0	0		0	69.2	30.8	0		100	0	0	0		
PHF	.250	.250	.000	.000	.500	.000	.000	.000	.000	.000	.000	.450	.500	.000	.464	.750	.000	.000	.000	.750	.563



Innovative Data, LLC

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Belchertown, Massachusetts

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N / S: South East Street
E / W: Fort River Enter & Watson Farm
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : PM Peak - S East @ Fort River Enter & Watson
Site Code : 13
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	South East From North					Fort River Entrance From East					South East From South					Watson Farms From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	102	3	0	105	0	0	0	0	0	5	82	0	0	87	8	0	0	0	8	200
02:15 PM	0	84	8	0	92	0	0	0	0	0	18	94	0	0	112	5	0	0	0	5	209
02:30 PM	0	129	12	0	141	0	0	0	0	0	19	83	0	0	102	6	0	0	4	10	253
02:45 PM	0	114	0	1	115	0	0	0	1	1	2	97	0	0	99	5	1	1	0	7	222
Total	0	429	23	1	453	0	0	0	1	1	44	356	0	0	400	24	1	1	4	30	884
03:00 PM	0	147	2	0	149	0	0	0	0	0	3	81	0	0	84	8	0	1	0	9	242
03:15 PM	0	133	4	0	137	0	0	0	0	0	1	103	0	0	104	7	0	1	0	8	249
03:30 PM	0	138	2	0	140	0	0	0	2	2	2	124	0	0	126	5	0	1	0	6	274
03:45 PM	0	154	7	4	165	0	0	0	12	12	1	116	0	10	127	11	0	1	1	13	317
Total	0	572	15	4	591	0	0	0	14	14	7	424	0	10	441	31	0	4	1	36	1082
04:00 PM	0	142	6	0	148	0	0	0	1	1	9	95	0	0	104	6	0	0	2	8	261
04:15 PM	0	139	7	0	146	0	0	0	1	1	1	105	0	0	106	6	1	0	0	7	260
04:30 PM	0	111	1	0	112	0	0	0	0	0	2	114	0	1	117	6	0	0	1	7	236
04:45 PM	0	145	4	0	149	0	0	0	3	3	5	124	0	0	129	3	1	0	0	4	285
Total	0	537	18	0	555	0	0	0	5	5	17	438	0	1	456	21	2	0	3	26	1042
05:00 PM	0	142	6	0	148	0	0	0	2	2	4	105	0	0	109	9	1	2	0	12	271
05:15 PM	0	159	4	1	164	0	0	0	1	1	8	120	0	0	128	6	0	0	2	8	301
05:30 PM	0	133	6	1	140	0	0	0	1	1	2	102	0	0	104	3	0	1	1	5	250
05:45 PM	0	119	8	0	127	0	0	0	3	3	4	102	0	0	106	9	0	0	0	9	245
Total	0	553	24	2	579	0	0	0	7	7	18	429	0	0	447	27	1	3	3	34	1067
Grand Total	0	2091	80	7	2178	0	0	0	27	27	86	1647	0	11	1744	103	4	8	11	126	4075
Apprch %	0	96	3.7	0.3		0	0	0	100		4.9	94.4	0	0.6		81.7	3.2	6.3	8.7		
Total %	0	51.3	2	0.2	53.4	0	0	0	0.7	0.7	2.1	40.4	0	0.3	42.8	2.5	0.1	0.2	0.3	3.1	
PCs and Peds																					
% PCs and Peds	0	97.1	87.5	71.4	96.6	0	0	0	92.6	92.6	93	96.4	0	100	96.3	96.1	100	100	18.2	89.7	96.2
Heavy Vehicles	0	57	10	0	67	0	0	0	0	0	6	56	0	0	62	1	0	0	0	1	130
% Heavy Vehicles	0	2.7	12.5	0	3.1	0	0	0	0	0	7	3.4	0	0	3.6	1	0	0	0	0.8	3.2
Bicycles	0	4	0	2	6	0	0	0	2	2	0	3	0	0	3	3	0	0	9	12	23
% Bicycles	0	0.2	0	28.6	0.3	0	0	0	7.4	7.4	0	0.2	0	0	0.2	2.9	0	0	81.8	9.5	0.6

	South East From North					Fort River Entrance From East					South East From South					Watson Farms From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:30 PM																					
03:30 PM	0	138	2	0	140	0	0	0	2	2	2	124	0	0	126	5	0	1	0	6	274
03:45 PM	0	154	7	4	165	0	0	0	12	12	1	116	0	10	127	11	0	1	1	13	317
04:00 PM	0	142	6	0	148	0	0	0	1	1	9	95	0	0	104	6	0	0	2	8	261
04:15 PM	0	139	7	0	146	0	0	0	1	1	1	105	0	0	106	6	1	0	0	7	260
Total Volume	0	573	22	4	599	0	0	0	16	16	13	440	0	10	463	28	1	2	3	34	1112
% App. Total	0	95.7	3.7	0.7		0	0	0	100		2.8	95	0	2.2		82.4	2.9	5.9	8.8		
PHF	.000	.930	.786	.250	.908	.000	.000	.000	.333	.333	.361	.887	.000	.250	.911	.636	.250	.500	.375	.654	.877



Innovative Data, LLC

P. O. Box 468
 Belchertown, Massachusetts
 InnovativeDataLLC.com or 413.668.5094

N / S: South East Street
 E / W: Fort River Enter & Watson Farm
 City, State: Amherst, Massachusetts
 Client: PARE Corporation

File Name : PM Peak - S East @ Fort River Enter & Watson
 Site Code : 13
 Start Date : 4/13/2022
 Page No : 1

Groups Printed- Heavy Vehicles

	South East From North					Fort River Entrance From East					South East From South					Watson Farms From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	3	2	0	5	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	12
02:15 PM	0	2	4	0	6	0	0	0	0	0	1	3	0	0	4	0	0	0	0	0	10
02:30 PM	0	6	3	0	9	0	0	0	0	0	0	6	0	0	6	0	0	0	0	0	15
02:45 PM	0	2	0	0	2	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	4
Total	0	13	9	0	22	0	0	0	0	0	1	18	0	0	19	0	0	0	0	0	41
03:00 PM	0	2	0	0	2	0	0	0	0	0	3	3	0	0	6	1	0	0	0	1	9
03:15 PM	0	4	0	0	4	0	0	0	0	0	1	8	0	0	9	0	0	0	0	0	13
03:30 PM	0	5	1	0	6	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	9
03:45 PM	0	9	0	0	9	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	11
Total	0	20	1	0	21	0	0	0	0	0	4	16	0	0	20	1	0	0	0	1	42
04:00 PM	0	2	0	0	2	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	5
04:15 PM	0	5	0	0	5	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	10
04:30 PM	0	1	0	0	1	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3
04:45 PM	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	6
Total	0	10	0	0	10	0	0	0	0	0	0	14	0	0	14	0	0	0	0	0	24
05:00 PM	0	1	0	0	1	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	5
05:15 PM	0	6	0	0	6	0	0	0	0	0	1	1	0	0	2	0	0	0	0	0	8
05:30 PM	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
05:45 PM	0	4	0	0	4	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	5
Total	0	14	0	0	14	0	0	0	0	0	1	8	0	0	9	0	0	0	0	0	23
Grand Total	0	57	10	0	67	0	0	0	0	0	6	56	0	0	62	1	0	0	0	1	130
Apprch %	0	85.1	14.9	0		0	0	0	0		9.7	90.3	0	0		100	0	0	0		
Total %	0	43.8	7.7	0	51.5	0	0	0	0	0	4.6	43.1	0	0	47.7	0.8	0	0	0	0.8	

	South East From North					Fort River Entrance From East					South East From South					Watson Farms From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:00 PM																					
03:00 PM	0	2	0	0	2	0	0	0	0	0	3	3	0	0	6	1	0	0	0	1	9
03:15 PM	0	4	0	0	4	0	0	0	0	0	1	8	0	0	9	0	0	0	0	0	13
03:30 PM	0	5	1	0	6	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	9
03:45 PM	0	9	0	0	9	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	11
Total Volume	0	20	1	0	21	0	0	0	0	0	4	16	0	0	20	1	0	0	0	1	42
% App. Total	0	95.2	4.8	0		0	0	0	0		20	80	0	0		100	0	0	0		
PHF	.000	.556	.250	.000	.583	.000	.000	.000	.000	.000	.333	.500	.000	.000	.556	.250	.000	.000	.000	.250	.808



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: South East Street
E / W: Fort River Elementary Exit
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : PM Peak - South East @ Fort River Exit
Site Code : 12
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	South East From North					Fort River Exit From East					South East From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	103	0	0	103	1	0	2	0	3	0	87	0	0	87	0	0	0	0	0	193
02:15 PM	0	89	0	0	89	2	0	1	3	6	0	94	0	0	94	0	0	0	0	0	189
02:30 PM	0	103	0	0	103	27	0	36	3	66	0	85	4	0	89	0	0	0	1	1	259
02:45 PM	0	108	0	0	108	6	0	14	2	22	0	101	0	0	101	0	0	0	0	0	231
Total	0	403	0	0	403	36	0	53	8	97	0	367	4	0	371	0	0	0	1	1	872
03:00 PM	0	135	0	0	135	11	0	13	1	25	0	79	1	0	80	0	0	0	0	0	240
03:15 PM	0	129	0	0	129	7	0	5	0	12	0	111	0	0	111	0	0	0	1	1	253
03:30 PM	0	129	0	0	129	6	0	14	0	20	0	137	0	0	137	0	0	0	2	2	288
03:45 PM	0	147	0	0	147	9	0	3	0	12	1	119	0	1	121	0	0	0	0	0	280
Total	0	540	0	0	540	33	0	35	1	69	1	446	1	1	449	0	0	0	3	3	1061
04:00 PM	0	149	0	0	149	1	0	4	0	5	0	104	0	2	106	0	0	0	3	3	263
04:15 PM	0	140	1	0	141	3	0	1	0	4	0	109	0	0	109	0	0	0	0	0	254
04:30 PM	0	116	0	0	116	5	0	1	0	6	0	114	0	0	114	0	0	0	4	4	240
04:45 PM	0	150	1	0	151	1	0	3	0	4	1	124	1	0	126	0	0	0	3	3	284
Total	0	555	2	0	557	10	0	9	0	19	1	451	1	2	455	0	0	0	10	10	1041
05:00 PM	0	146	1	0	147	6	0	3	0	9	0	116	1	0	117	0	0	0	0	0	273
05:15 PM	0	161	0	0	161	4	0	3	0	7	0	126	0	0	126	0	0	0	0	0	294
05:30 PM	0	129	1	0	130	3	0	7	0	10	0	103	0	0	103	0	0	0	1	1	244
05:45 PM	0	114	0	0	114	17	0	11	0	28	0	105	0	0	105	0	0	0	3	3	250
Total	0	550	2	0	552	30	0	24	0	54	0	450	1	0	451	0	0	0	4	4	1061
Grand Total	0	2048	4	0	2052	109	0	121	9	239	2	1714	7	3	1726	0	0	0	18	18	4035
Apprch %	0	99.8	0.2	0		45.6	0	50.6	3.8		0.1	99.3	0.4	0.2		0	0	0	100		
Total %	0	50.8	0.1	0	50.9	2.7	0	3	0.2	5.9	0	42.5	0.2	0.1	42.8	0	0	0	0.4	0.4	
PCs and Peds																					
% PCs and Peds	0	97	75	0	97	93.6	0	95	100	94.6	100	96.1	42.9	100	95.9	0	0	0	100	100	96.4
Heavy Vehicles	0	58	0	0	58	7	0	5	0	12	0	63	0	0	63	0	0	0	0	0	133
% Heavy Vehicles	0	2.8	0	0	2.8	6.4	0	4.1	0	5	0	3.7	0	0	3.7	0	0	0	0	0	3.3
Bicycles	0	3	1	0	4	0	0	1	0	1	0	4	4	0	8	0	0	0	0	0	13
% Bicycles	0	0.1	25	0	0.2	0	0	0.8	0	0.4	0	0.2	57.1	0	0.5	0	0	0	0	0	0.3

	South East From North					Fort River Exit From East					South East From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	150	1	0	151	1	0	3	0	4	1	124	1	0	126	0	0	0	3	3	284
05:00 PM	0	146	1	0	147	6	0	3	0	9	0	116	1	0	117	0	0	0	0	0	273
05:15 PM	0	161	0	0	161	4	0	3	0	7	0	126	0	0	126	0	0	0	0	0	294
05:30 PM	0	129	1	0	130	3	0	7	0	10	0	103	0	0	103	0	0	0	1	1	244
Total Volume	0	586	3	0	589	14	0	16	0	30	1	469	2	0	472	0	0	0	4	4	1095
% App. Total	0	99.5	0.5	0		46.7	0	53.3	0		0.2	99.4	0.4	0		0	0	0	100		
PHF	.000	.910	.750	.000	.915	.583	.000	.571	.000	.750	.250	.931	.500	.000	.937	.000	.000	.000	.333	.333	.931



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: South East Street
E / W: Fort River Elementary Exit
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : PM Peak - South East @ Fort River Exit
Site Code : 12
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	South East From North					Fort River Exit From East					South East From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	3	0	0	3	0	0	1	0	1	0	6	0	0	6	0	0	0	0	0	10
02:15 PM	0	6	0	0	6	1	0	0	0	1	0	3	0	0	3	0	0	0	0	0	10
02:30 PM	0	5	0	0	5	2	0	3	0	5	0	6	0	0	6	0	0	0	0	0	16
02:45 PM	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
Total	0	17	0	0	17	3	0	4	0	7	0	17	0	0	17	0	0	0	0	0	41
03:00 PM	0	2	0	0	2	2	0	0	0	2	0	4	0	0	4	0	0	0	0	0	8
03:15 PM	0	3	0	0	3	1	0	0	0	1	0	7	0	0	7	0	0	0	0	0	11
03:30 PM	0	5	0	0	5	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	8
03:45 PM	0	8	0	0	8	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	11
Total	0	18	0	0	18	3	0	0	0	3	0	17	0	0	17	0	0	0	0	0	38
04:00 PM	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	6
04:15 PM	0	5	0	0	5	0	0	0	0	0	0	7	0	0	7	0	0	0	0	0	12
04:30 PM	0	1	0	0	1	0	0	0	0	0	0	5	0	0	5	0	0	0	0	0	6
04:45 PM	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	6
Total	0	10	0	0	10	0	0	0	0	0	0	20	0	0	20	0	0	0	0	0	30
05:00 PM	0	2	0	0	2	0	0	0	0	0	0	4	0	0	4	0	0	0	0	0	6
05:15 PM	0	4	0	0	4	0	0	1	0	1	0	1	0	0	1	0	0	0	0	0	6
05:30 PM	0	3	0	0	3	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	6
05:45 PM	0	4	0	0	4	1	0	0	0	1	0	1	0	0	1	0	0	0	0	0	6
Total	0	13	0	0	13	1	0	1	0	2	0	9	0	0	9	0	0	0	0	0	24
Grand Total	0	58	0	0	58	7	0	5	0	12	0	63	0	0	63	0	0	0	0	0	133
Apprch %	0	100	0	0		58.3	0	41.7	0		0	100	0	0		0	0	0	0		
Total %	0	43.6	0	0	43.6	5.3	0	3.8	0	9	0	47.4	0	0	47.4	0	0	0	0	0	

	South East From North					Fort River Exit From East					South East From South					From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	3	0	0	3	0	0	1	0	1	0	6	0	0	6	0	0	0	0	0	10
02:15 PM	0	6	0	0	6	1	0	0	0	1	0	3	0	0	3	0	0	0	0	0	10
02:30 PM	0	5	0	0	5	2	0	3	0	5	0	6	0	0	6	0	0	0	0	0	16
02:45 PM	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	5
Total Volume	0	17	0	0	17	3	0	4	0	7	0	17	0	0	17	0	0	0	0	0	41
% App. Total	0	100	0	0		42.9	0	57.1	0		0	100	0	0		0	0	0	0		
PHF	.000	.708	.000	.000	.708	.375	.000	.333	.000	.350	.000	.708	.000	.000	.708	.000	.000	.000	.000	.000	.641

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:00 PM



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: Hills Road
E / W: Strong Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : PM Peak - Strong @ Hills
Site Code : 5
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	From North					Strong From East					Hills From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	0	0	1	1	0	30	0	0	30	0	0	1	1	2	3	25	1	0	29	62
02:15 PM	0	0	0	1	1	0	28	1	1	30	1	0	1	0	2	1	24	0	0	25	58
02:30 PM	0	0	0	0	0	0	18	0	0	18	0	0	2	1	3	10	38	0	0	48	69
02:45 PM	0	0	0	0	0	0	21	1	0	22	0	0	0	0	0	5	28	0	0	33	55
Total	0	0	0	2	2	0	97	2	1	100	1	0	4	2	7	19	115	1	0	135	244
03:00 PM	0	0	0	0	0	0	16	0	0	16	0	0	0	0	0	2	47	0	0	49	65
03:15 PM	0	0	0	0	0	0	24	0	0	24	0	0	1	1	2	4	24	0	0	28	54
03:30 PM	0	0	0	0	0	0	28	1	0	29	0	0	2	2	4	2	30	0	0	32	65
03:45 PM	0	0	0	1	1	0	31	0	0	31	0	0	3	0	3	5	38	0	0	43	78
Total	0	0	0	1	1	0	99	1	0	100	0	0	6	3	9	13	139	0	0	152	262
04:00 PM	0	0	0	0	0	0	17	0	0	17	1	0	1	6	8	9	42	0	0	51	76
04:15 PM	0	0	0	0	0	0	20	1	0	21	1	0	2	1	4	2	30	0	0	32	57
04:30 PM	0	0	0	0	0	0	24	0	0	24	1	0	0	3	4	1	35	0	0	36	64
04:45 PM	0	0	0	1	1	0	19	0	0	19	0	0	0	2	2	0	29	0	0	29	51
Total	0	0	0	1	1	0	80	1	0	81	3	0	3	12	18	12	136	0	0	148	248
05:00 PM	0	0	0	0	0	0	29	1	0	30	0	0	1	2	3	4	46	0	0	50	83
05:15 PM	0	0	0	0	0	0	34	0	0	34	0	0	0	3	3	1	32	0	0	33	70
05:30 PM	0	0	0	1	1	0	22	0	0	22	1	0	2	1	4	1	39	0	0	40	67
05:45 PM	0	0	0	0	0	0	17	1	0	18	3	0	2	0	5	2	43	0	0	45	68
Total	0	0	0	1	1	0	102	2	0	104	4	0	5	6	15	8	160	0	0	168	288
Grand Total	0	0	0	5	5	0	378	6	1	385	8	0	18	23	49	52	550	1	0	603	1042
Apprch %	0	0	0	100		0	98.2	1.6	0.3		16.3	0	36.7	46.9		8.6	91.2	0.2	0		
Total %	0	0	0	0.5	0.5	0	36.3	0.6	0.1	36.9	0.8	0	1.7	2.2	4.7	5	52.8	0.1	0	57.9	
PCs and Peds																					
% PCs and Peds	0	0	0	100	100	0	96.3	83.3	100	96.1	75	0	72.2	100	85.7	73.1	96.9	100	0	94.9	94.9
Heavy Vehicles	0	0	0	0	0	0	13	1	0	14	0	0	2	0	2	8	13	0	0	21	37
% Heavy Vehicles	0	0	0	0	0	0	3.4	16.7	0	3.6	0	0	11.1	0	4.1	15.4	2.4	0	0	3.5	3.6
Bicycles	0	0	0	0	0	0	1	0	0	1	2	0	3	0	5	6	4	0	0	10	16
% Bicycles	0	0	0	0	0	0	0.3	0	0	0.3	25	0	16.7	0	10.2	11.5	0.7	0	0	1.7	1.5

	From North					Strong From East					Hills From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	0	0	0	0	0	29	1	0	30	0	0	1	2	3	4	46	0	0	50	83
05:15 PM	0	0	0	0	0	0	34	0	0	34	0	0	0	3	3	1	32	0	0	33	70
05:30 PM	0	0	0	1	1	0	22	0	0	22	1	0	2	1	4	1	39	0	0	40	67
05:45 PM	0	0	0	0	0	0	17	1	0	18	3	0	2	0	5	2	43	0	0	45	68
Total Volume	0	0	0	1	1	0	102	2	0	104	4	0	5	6	15	8	160	0	0	168	288
% App. Total	0	0	0	100		0	98.1	1.9	0		26.7	0	33.3	40		4.8	95.2	0	0		
PHF	.000	.000	.000	.250	.250	.000	.750	.500	.000	.765	.333	.000	.625	.500	.750	.500	.870	.000	.000	.840	.867



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: Hills Road
E / W: Strong Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : PM Peak - Strong @ Hills
Site Code : 5
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	From North					Strong From East					Hills From South					Strong From West						
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total	
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	0	2	3
02:15 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	0	1	4
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	3	0	0	0	5	6
02:45 PM	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	0	3	0	0	0	3	8
Total	0	0	0	0	0	0	7	1	0	8	0	0	2	0	2	4	7	0	0	0	11	21
03:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	1	0	0	0	1	3
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	3	3
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	0	0	3	3
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
Total	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	3	5	0	0	0	8	10
04:00 PM	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	1	0	0	0	0	1	3
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	1	0	0	0	0	1	4
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1	2
Grand Total	0	0	0	0	0	0	13	1	0	14	0	0	2	0	2	8	13	0	0	0	21	37
Apprch %	0	0	0	0	0	0	92.9	7.1	0		0	0	100	0		38.1	61.9	0	0			
Total %	0	0	0	0	0	0	35.1	2.7	0	37.8	0	0	5.4	0	5.4	21.6	35.1	0	0	0	56.8	

	From North					Strong From East					Hills From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:00 PM																					
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	0	0	0	2	3
02:15 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	1	0	0	1	4
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2	3	0	0	5	6
02:45 PM	0	0	0	0	0	0	4	1	0	5	0	0	0	0	0	0	3	0	0	3	8
Total Volume	0	0	0	0	0	0	7	1	0	8	0	0	2	0	2	4	7	0	0	11	21
% App. Total	0	0	0	0	0	0	87.5	12.5	0		0	0	100	0		36.4	63.6	0	0		
PHF	.000	.000	.000	.000	.000	.000	.438	.250	.000	.400	.000	.000	.500	.000	.500	.500	.583	.000	.000	.550	.656

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:00 PM



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: Red Gate Lane
E / W: Strong Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : PM Peak - Strong @ Red Gate
Site Code : 6
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	From North					Strong From East					Red Gate From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	0	0	1	1	0	26	3	0	29	3	0	1	3	7	1	26	0	0	27	64
02:15 PM	0	0	0	0	0	0	28	0	0	28	1	0	4	0	5	4	23	0	0	27	60
02:30 PM	0	0	0	0	0	0	17	0	0	17	1	0	0	0	1	1	32	0	0	33	51
02:45 PM	0	0	0	0	0	0	20	3	1	24	2	0	2	2	6	0	27	0	0	27	57
Total	0	0	0	1	1	0	91	6	1	98	7	0	7	5	19	6	108	0	0	114	232
03:00 PM	0	0	0	0	0	0	12	1	1	14	2	0	1	0	3	1	43	0	0	44	61
03:15 PM	0	0	0	0	0	0	21	2	0	23	2	0	3	1	6	0	23	0	0	23	52
03:30 PM	0	0	0	0	0	0	26	2	0	28	3	0	0	1	4	2	23	0	0	25	57
03:45 PM	0	0	0	1	1	0	29	4	0	33	4	0	0	2	6	4	36	0	0	40	80
Total	0	0	0	1	1	0	88	9	1	98	11	0	4	4	19	7	125	0	0	132	250
04:00 PM	0	0	0	0	0	0	17	1	0	18	4	0	0	4	8	2	44	0	0	46	72
04:15 PM	0	0	0	0	0	0	21	0	0	21	5	0	0	3	8	0	32	0	0	32	61
04:30 PM	0	0	0	0	0	0	23	1	0	24	3	0	1	6	10	1	33	0	0	34	68
04:45 PM	0	0	0	0	0	0	21	2	0	23	1	0	0	1	2	0	34	0	0	34	59
Total	0	0	0	0	0	0	82	4	0	86	13	0	1	14	28	3	143	0	0	146	260
05:00 PM	0	0	0	0	0	0	27	0	0	27	3	0	1	0	4	2	39	0	0	41	72
05:15 PM	0	0	0	0	0	0	29	1	0	30	2	0	4	1	7	1	31	0	0	32	69
05:30 PM	0	0	0	0	0	0	26	0	0	26	2	0	0	0	2	1	42	0	0	43	71
05:45 PM	0	0	0	0	0	0	17	0	0	17	3	0	0	3	6	1	44	0	0	45	68
Total	0	0	0	0	0	0	99	1	0	100	10	0	5	4	19	5	156	0	0	161	280
Grand Total	0	0	0	2	2	0	360	20	2	382	41	0	17	27	85	21	532	0	0	553	1022
Apprch %	0	0	0	100		0	94.2	5.2	0.5		48.2	0	20	31.8		3.8	96.2	0	0		
Total %	0	0	0	0.2	0.2	0	35.2	2	0.2	37.4	4	0	1.7	2.6	8.3	2.1	52.1	0	0	54.1	
PCs and Peds																					
% PCs and Peds	0	0	0	100	100	0	97.5	90	100	97.1	97.6	0	94.1	96.3	96.5	81	98.7	0	0	98	97.6
Heavy Vehicles	0	0	0	0	0	0	5	2	0	7	0	0	1	0	1	2	5	0	0	7	15
% Heavy Vehicles	0	0	0	0	0	0	1.4	10	0	1.8	0	0	5.9	0	1.2	9.5	0.9	0	0	1.3	1.5
Bicycles	0	0	0	0	0	0	4	0	0	4	1	0	0	1	2	2	2	0	0	4	10
% Bicycles	0	0	0	0	0	0	1.1	0	0	1	2.4	0	0	3.7	2.4	9.5	0.4	0	0	0.7	1

	From North					Strong From East					Red Gate From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:45 PM																					
03:45 PM	0	0	0	1	1	0	29	4	0	33	4	0	0	2	6	4	36	0	0	40	80
04:00 PM	0	0	0	0	0	0	17	1	0	18	4	0	0	4	8	2	44	0	0	46	72
04:15 PM	0	0	0	0	0	0	21	0	0	21	5	0	0	3	8	0	32	0	0	32	61
04:30 PM	0	0	0	0	0	0	23	1	0	24	3	0	1	6	10	1	33	0	0	34	68
Total Volume	0	0	0	1	1	0	90	6	0	96	16	0	1	15	32	7	145	0	0	152	281
% App. Total	0	0	0	100		0	93.8	6.2	0		50	0	3.1	46.9		4.6	95.4	0	0		
PHF	.000	.000	.000	.250	.250	.000	.776	.375	.000	.727	.800	.000	.250	.625	.800	.438	.824	.000	.000	.826	.878



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: Red Gate Lane
E / W: Strong Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : PM Peak - Strong @ Red Gate
Site Code : 6
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	From North					Strong From East					Red Gate From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
02:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
02:45 PM	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	0	1	0	0	0	1
Total	0	0	0	0	0	0	1	1	0	2	0	0	1	0	1	2	2	0	0	4	7
03:00 PM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	3
03:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1
03:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	2	0	0	2	4
04:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
05:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	1	2
Grand Total	0	0	0	0	0	0	5	2	0	7	0	0	1	0	1	2	5	0	0	7	15
Apprch %	0	0	0	0	0	0	71.4	28.6	0		0	0	100	0		28.6	71.4	0	0		
Total %	0	0	0	0	0	0	33.3	13.3	0	46.7	0	0	6.7	0	6.7	13.3	33.3	0	0	46.7	

	From North					Strong From East					Red Gate From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:15 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	1	0	0	0	1
02:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1
02:45 PM	0	0	0	0	0	0	0	1	0	1	0	0	1	0	1	0	1	0	0	1	3
03:00 PM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	1	0	0	1	3
Total Volume	0	0	0	0	0	0	2	2	0	4	0	0	1	0	1	1	3	0	0	4	9
% App. Total	0	0	0	0	0	0	50	50	0		0	0	100	0		25	75	0	0		
PHF	.000	.000	.000	.000	.000	.000	.500	.500	.000	.500	.000	.000	.250	.000	.250	.250	.750	.000	.000	1.00	.750

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 02:15 PM



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: Wildwood Elementary
E / W: Strong Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : PM Peak - Strong @ Wildwood Elementary
Site Code : 4
Start Date : 4/13/2022
Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	From North					Strong From East					Wildwood From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	0	0	0	0	0	28	2	0	30	1	0	1	3	5	4	25	0	0	29	64
02:15 PM	0	0	0	0	0	0	25	7	1	33	2	0	4	1	7	23	24	0	0	47	87
02:30 PM	0	0	0	0	0	0	15	4	0	19	13	0	39	4	56	17	31	0	0	48	123
02:45 PM	0	0	0	0	0	0	20	1	1	22	5	0	15	6	26	9	25	0	6	40	88
Total	0	0	0	0	0	0	88	14	2	104	21	0	59	14	94	53	105	0	6	164	362
03:00 PM	0	0	0	0	0	0	13	2	0	15	4	0	23	1	28	16	46	0	2	64	107
03:15 PM	0	0	0	0	0	0	24	1	0	25	6	0	13	1	20	6	22	0	0	28	73
03:30 PM	0	0	0	0	0	0	28	2	0	30	1	0	7	4	12	3	30	0	0	33	75
03:45 PM	0	0	0	0	0	0	32	2	0	34	10	0	12	2	24	16	36	0	0	52	110
Total	0	0	0	0	0	0	97	7	0	104	21	0	55	8	84	41	134	0	2	177	365
04:00 PM	0	0	0	0	0	0	17	2	0	19	12	0	30	1	43	4	37	0	0	41	103
04:15 PM	0	0	0	0	0	0	19	3	0	22	1	0	4	6	11	10	32	0	0	42	75
04:30 PM	0	0	0	0	0	0	22	2	0	24	2	0	8	4	14	6	33	0	0	39	77
04:45 PM	0	0	0	0	0	0	21	0	2	23	1	0	5	2	8	7	34	0	0	41	72
Total	0	0	0	0	0	0	79	7	2	88	16	0	47	13	76	27	136	0	0	163	327
05:00 PM	0	0	0	0	0	0	23	3	0	26	2	0	6	2	10	9	44	0	2	55	91
05:15 PM	0	0	0	0	0	0	27	6	0	33	5	0	5	1	11	10	28	0	0	38	82
05:30 PM	0	0	0	0	0	0	23	3	0	26	4	0	15	0	19	2	36	0	0	38	83
05:45 PM	0	0	0	0	0	0	17	2	0	19	2	0	13	0	15	6	42	0	0	48	82
Total	0	0	0	0	0	0	90	14	0	104	13	0	39	3	55	27	150	0	2	179	338
Grand Total	0	0	0	0	0	0	354	42	4	400	71	0	200	38	309	148	525	0	10	683	1392
Apprch %	0	0	0	0	0	0	88.5	10.5	1	23	23	0	64.7	12.3	21.7	21.7	76.9	0	1.5	49.1	
Total %	0	0	0	0	0	0	25.4	3	0.3	28.7	5.1	0	14.4	2.7	22.2	10.6	37.7	0	0.7	49.1	
PCs and Peds																					
% PCs and Peds	0	0	0	0	0	0	95.2	90.5	100	94.8	93	0	92	100	93.2	87.8	98.3	0	100	96	95
Heavy Vehicles	0	0	0	0	0	0	11	4	0	15	5	0	14	0	19	17	9	0	0	26	60
% Heavy Vehicles	0	0	0	0	0	0	3.1	9.5	0	3.8	7	0	7	0	6.1	11.5	1.7	0	0	3.8	4.3
Bicycles	0	0	0	0	0	0	6	0	0	6	0	0	2	0	2	1	0	0	0	1	9
% Bicycles	0	0	0	0	0	0	1.7	0	0	1.5	0	0	1	0	0.6	0.7	0	0	0	0.1	0.6

	From North					Strong From East					Wildwood From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:15 PM																					
02:15 PM	0	0	0	0	0	0	25	7	1	33	2	0	4	1	7	23	24	0	0	47	87
02:30 PM	0	0	0	0	0	0	15	4	0	19	13	0	39	4	56	17	31	0	0	48	123
02:45 PM	0	0	0	0	0	0	20	1	1	22	5	0	15	6	26	9	25	0	6	40	88
03:00 PM	0	0	0	0	0	0	13	2	0	15	4	0	23	1	28	16	46	0	2	64	107
Total Volume	0	0	0	0	0	0	73	14	2	89	24	0	81	12	117	65	126	0	8	199	405
% App. Total	0	0	0	0	0	0	82	15.7	2.2	20.5	20.5	0	69.2	10.3	32.7	32.7	63.3	0	4	77.7	82.3
PHF	.000	.000	.000	.000	.000	.000	.730	.500	.500	.674	.462	.000	.519	.500	.522	.707	.685	.000	.333	.777	.823



Innovative Data, LLC

P. O. Box 468
Belchertown, Massachusetts
InnovativeDataLLC.com or 413.668.5094

N / S: Wildwood Elementary
E / W: Strong Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : PM Peak - Strong @ Wildwood Elementary
Site Code : 4
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	From North					Strong From East					Wildwood From South					Strong From West						
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total	
02:00 PM	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	0	2	0	0	0	2	4
02:15 PM	0	0	0	0	0	0	1	2	0	3	0	0	0	0	0	9	1	0	0	10	13	
02:30 PM	0	0	0	0	0	0	1	0	0	1	3	0	10	0	13	1	0	0	0	1	15	
02:45 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5	
Total	0	0	0	0	0	0	6	3	0	9	3	0	10	0	13	10	5	0	0	15	37	
03:00 PM	0	0	0	0	0	0	1	0	0	1	1	0	2	0	3	4	0	0	0	4	8	
03:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2	1	2	0	0	3	5	
03:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	
03:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
Total	0	0	0	0	0	0	2	0	0	2	2	0	3	0	5	5	3	0	0	8	15	
04:00 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
04:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
04:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	1	
04:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Total	0	0	0	0	0	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	2	
05:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	1	
05:15 PM	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	1	0	0	0	1	2	
05:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
05:45 PM	0	0	0	0	0	0	1	0	0	1	0	0	1	0	1	1	0	0	0	1	3	
Total	0	0	0	0	0	0	1	1	0	2	0	0	1	0	1	2	1	0	0	3	6	
Grand Total	0	0	0	0	0	0	11	4	0	15	5	0	14	0	19	17	9	0	0	26	60	
Apprch %	0	0	0	0	0	0	73.3	26.7	0	26.3	0	73.7	0	0	65.4	34.6	0	0	0	0		
Total %	0	0	0	0	0	0	18.3	6.7	0	25	8.3	0	23.3	0	31.7	28.3	15	0	0	43.3		

	From North					Strong From East					Wildwood From South					Strong From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 02:15 PM																					
02:15 PM	0	0	0	0	0	0	1	2	0	3	0	0	0	0	0	9	1	0	0	10	13
02:30 PM	0	0	0	0	0	0	1	0	0	1	3	0	10	0	13	1	0	0	0	1	15
02:45 PM	0	0	0	0	0	0	3	0	0	3	0	0	0	0	0	0	2	0	0	2	5
03:00 PM	0	0	0	0	0	0	1	0	0	1	1	0	2	0	3	4	0	0	0	4	8
Total Volume	0	0	0	0	0	0	6	2	0	8	4	0	12	0	16	14	3	0	0	17	41
% App. Total	0	0	0	0	0	0	75	25	0	25	25	0	75	0	82.4	17.6	0	0	0	0	
PHF	.000	.000	.000	.000	.000	.000	.500	.250	.000	.667	.333	.000	.300	.000	.308	.389	.375	.000	.000	.425	.683



Innovative Data, LLC

P. O. Box 468

Belchertown, Massachusetts

InnovativeDataLLC.com or 413.668.5094

N / S: East Pleasant Street

E / W: Triangle Street

City, State: Amherst, Massachusetts

Client: PARE Corporation

File Name : PM Peak - East Pleasant @ Triangle

Site Code : 3

Start Date : 4/13/2022

Page No : 1

Groups Printed- PCs and Peds - Heavy Vehicles - Bicycles

	East Pleasant From North					Triangle From East					East Pleasant From South					Triangle From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	8	32	11	10	61	8	46	4	2	60	10	32	32	4	78	45	59	2	0	106	305
02:15 PM	22	41	8	4	75	26	57	9	6	98	14	50	42	5	111	45	67	8	5	125	409
02:30 PM	11	53	13	5	82	19	38	10	1	68	8	43	35	2	88	46	59	13	3	121	359
02:45 PM	19	55	12	6	92	15	45	13	5	78	9	35	31	2	77	41	39	11	1	92	339
Total	60	181	44	25	310	68	186	36	14	304	41	160	140	13	354	177	224	34	9	444	1412
03:00 PM	17	63	8	5	93	26	40	11	4	81	13	46	28	0	87	48	60	15	6	129	390
03:15 PM	14	42	21	8	85	29	63	11	8	111	12	39	33	3	87	39	51	15	3	108	391
03:30 PM	25	61	9	13	108	48	85	28	4	165	16	44	38	0	98	62	60	16	2	140	511
03:45 PM	29	62	9	19	119	65	118	17	5	205	15	52	42	6	115	45	65	15	8	133	572
Total	85	228	47	45	405	168	306	67	21	562	56	181	141	9	387	194	236	61	19	510	1864
04:00 PM	25	66	5	15	111	37	79	18	10	144	11	43	38	0	92	46	88	14	2	150	497
04:15 PM	24	48	9	18	99	29	60	16	9	114	7	54	49	6	116	52	44	19	2	117	446
04:30 PM	12	52	14	12	90	26	51	9	5	91	6	47	31	2	86	54	61	12	4	131	398
04:45 PM	15	55	12	9	91	38	58	9	10	115	8	50	33	1	92	52	74	10	5	141	439
Total	76	221	40	54	391	130	248	52	34	464	32	194	151	9	386	204	267	55	13	539	1780
05:00 PM	25	74	21	21	141	27	74	18	4	123	12	39	32	2	85	57	71	11	1	140	489
05:15 PM	13	44	16	15	88	42	63	13	2	120	11	53	32	0	96	62	69	17	1	149	453
05:30 PM	19	46	16	11	92	30	69	18	13	130	11	44	27	5	87	59	68	9	2	138	447
05:45 PM	8	42	13	14	77	48	47	11	12	118	17	27	34	5	83	73	66	16	2	157	435
Total	65	206	66	61	398	147	253	60	31	491	51	163	125	12	351	251	274	53	6	584	1824
Grand Total	286	836	197	185	1504	513	993	215	100	1821	180	698	557	43	1478	826	1001	203	47	2077	6880
Apprch %	19	55.6	13.1	12.3		28.2	54.5	11.8	5.5		12.2	47.2	37.7	2.9		39.8	48.2	9.8	2.3		
Total %	4.2	12.2	2.9	2.7	21.9	7.5	14.4	3.1	1.5	26.5	2.6	10.1	8.1	0.6	21.5	12	14.5	3	0.7	30.2	
PCs and Peds	270	819	195	178	1462	506	979	210	100	1795	178	682	497	43	1400	752	987	187	46	1972	6629
% PCs and Peds	94.4	98	99	96.2	97.2	98.6	98.6	97.7	100	98.6	98.9	97.7	89.2	100	94.7	91	98.6	92.1	97.9	94.9	96.4
Heavy Vehicles	11	10	2	0	23	4	4	2	0	10	1	16	59	0	76	59	6	12	0	77	186
% Heavy Vehicles	3.8	1.2	1	0	1.5	0.8	0.4	0.9	0	0.5	0.6	2.3	10.6	0	5.1	7.1	0.6	5.9	0	3.7	2.7
Bicycles	5	7	0	7	19	3	10	3	0	16	1	0	1	0	2	15	8	4	1	28	65
% Bicycles	1.7	0.8	0	3.8	1.3	0.6	1	1.4	0	0.9	0.6	0	0.2	0	0.1	1.8	0.8	2	2.1	1.3	0.9

	East Pleasant From North					Triangle From East					East Pleasant From South					Triangle From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 03:30 PM																					
03:30 PM	25	61	9	13	108	48	85	28	4	165	16	44	38	0	98	62	60	16	2	140	511
03:45 PM	29	62	9	19	119	65	118	17	5	205	15	52	42	6	115	45	65	15	8	133	572
04:00 PM	25	66	5	15	111	37	79	18	10	144	11	43	38	0	92	46	88	14	2	150	497
04:15 PM	24	48	9	18	99	29	60	16	9	114	7	54	49	6	116	52	44	19	2	117	446
Total Volume	103	237	32	65	437	179	342	79	28	628	49	193	167	12	421	205	257	64	14	540	2026
% App. Total	23.6	54.2	7.3	14.9		28.5	54.5	12.6	4.5		11.6	45.8	39.7	2.9		38	47.6	11.9	2.6		
PHF	.888	.898	.889	.855	.918	.688	.725	.705	.700	.766	.766	.894	.852	.500	.907	.827	.730	.842	.438	.900	.885



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N / S: East Pleasant Street
E / W: Triangle Street
City, State: Amherst, Massachusetts
Client: PARE Corporation

File Name : PM Peak - East Pleasant @ Triangle
Site Code : 3
Start Date : 4/13/2022
Page No : 1

Groups Printed- Heavy Vehicles

	East Pleasant From North					Triangle From East					East Pleasant From South					Triangle From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
02:00 PM	0	0	0	0	0	1	0	0	0	1	0	1	3	0	4	1	0	0	0	1	6
02:15 PM	1	1	0	0	2	1	1	0	0	2	1	2	4	0	7	4	2	1	0	7	18
02:30 PM	0	1	1	0	2	0	0	0	0	0	0	0	2	0	2	4	0	0	0	4	8
02:45 PM	0	0	0	0	0	0	0	0	0	0	0	1	6	0	7	5	0	1	0	6	13
Total	1	2	1	0	4	2	1	0	0	3	1	4	15	0	20	14	2	2	0	18	45
03:00 PM	1	0	0	0	1	0	1	0	0	1	0	3	3	0	6	3	1	2	0	6	14
03:15 PM	1	0	0	0	1	0	0	0	0	0	0	2	5	0	7	3	0	0	0	3	11
03:30 PM	0	0	1	0	1	0	0	0	0	0	0	1	3	0	4	5	1	1	0	7	12
03:45 PM	1	4	0	0	5	1	0	0	0	1	0	0	3	0	3	3	1	1	0	5	14
Total	3	4	1	0	8	1	1	0	0	2	0	6	14	0	20	14	3	4	0	21	51
04:00 PM	1	1	0	0	2	0	0	0	0	0	0	0	4	0	4	5	0	0	0	5	11
04:15 PM	1	0	0	0	1	1	1	0	0	2	0	4	5	0	9	6	0	1	0	7	19
04:30 PM	1	2	0	0	3	0	1	1	0	2	0	0	3	0	3	5	0	1	0	6	14
04:45 PM	1	0	0	0	1	0	0	0	0	0	0	1	3	0	4	2	0	1	0	3	8
Total	4	3	0	0	7	1	2	1	0	4	0	5	15	0	20	18	0	3	0	21	52
05:00 PM	1	0	0	0	1	0	0	1	0	1	0	0	4	0	4	3	0	0	0	3	9
05:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5	5	0	2	0	7	12
05:30 PM	1	0	0	0	1	0	0	0	0	0	0	1	2	0	3	4	0	1	0	5	9
05:45 PM	1	1	0	0	2	0	0	0	0	0	0	0	4	0	4	1	1	0	0	2	8
Total	3	1	0	0	4	0	0	1	0	1	0	1	15	0	16	13	1	3	0	17	38
Grand Total	11	10	2	0	23	4	4	2	0	10	1	16	59	0	76	59	6	12	0	77	186
Apprch %	47.8	43.5	8.7	0		40	40	20	0		1.3	21.1	77.6	0		76.6	7.8	15.6	0		
Total %	5.9	5.4	1.1	0	12.4	2.2	2.2	1.1	0	5.4	0.5	8.6	31.7	0	40.9	31.7	3.2	6.5	0	41.4	

	East Pleasant From North					Triangle From East					East Pleasant From South					Triangle From West					
Start Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
03:45 PM	1	4	0	0	5	1	0	0	0	1	0	0	3	0	3	3	1	1	0	5	14
04:00 PM	1	1	0	0	2	0	0	0	0	0	0	0	4	0	4	5	0	0	0	5	11
04:15 PM	1	0	0	0	1	1	1	0	0	2	0	4	5	0	9	6	0	1	0	7	19
04:30 PM	1	2	0	0	3	0	1	1	0	2	0	0	3	0	3	5	0	1	0	6	14
Total Volume	4	7	0	0	11	2	2	1	0	5	0	4	15	0	19	19	1	3	0	23	58
% App. Total	36.4	63.6	0	0		40	40	20	0		0	21.1	78.9	0		82.6	4.3	13	0		
PHF	1.00	.438	.000	.000	.550	.500	.500	.250	.000	.625	.000	.250	.750	.000	.528	.792	.250	.750	.000	.821	.763

Peak Hour Analysis From 02:00 PM to 05:45 PM - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 03:45 PM

Appendix B

Crash Data



Fort River Elementary School
Amherst, MA
Crash Data Summary
Pare Project No. 21245.00
January, 2021



Crash Ref. No.	Report No.	Date	Time	On Street	Intersecting Street	Directions of Travel	No. of Vehicles	Injuries	Fatalities	Weather Condition	Road Condition	Lighting	Crash Type
1	16-96-AC	04/04/2016	12:45 PM	SOUTH EAST ST	WATSON FARMS	North/East	2	0	0	Snow	Snow	Daylight	Angle
2	17-309-AC	10/24/2017	3:21 PM	SOUTH EAST ST	WATSON FARMS	West/South	2	0	0	Rain	Wet	Daylight	Angle
3	18-296-AC	09/28/2018	8:55 AM	SOUTH EAST ST	WATSON FARMS	West/North	2	0	0	Cloudy/Rain	Wet	Daylight	Angle
4	18-390-AC	11/27/2018	12:27 AM	SOUTH EAST ST	WATSON FARMS	South	1	0	0	Rain	Wet	Dark - lighted roadway	Single vehicle crash
5	19-13-AC	01/16/2019	5:17 PM	SOUTH EAST ST	WATSON FARMS	South/north	2	0	0	Cloudy	Dry	Dark - lighted roadway	Angle
6	19-279-AC	10/15/2019	2:15 PM	SOUTH EAST ST	WATSON FARMS	West/North	2	0	0	Clear	Dry	Daylight	Angle
7	15-10-AC	01/13/2015	5:22 PM	SOUTH EAST ST	BELCHERTOWN RD	South/South	2	0	0	Clear	Ice	Dark - lighted roadway	Rear-end
8	15-74-AC	02/16/2015	1:42 PM	SOUTH EAST ST	COLLEGE ST	East/East	2	0	0	Clear	Wet	Daylight	Rear-end
9	15-226-AC	08/03/2015	3:52 PM	SOUTH EAST ST	COLLEGE ST	South/South	2	0	0	Clear	Dry	Daylight	Rear-end
10	15-289-AC	10/11/2015	7:00 PM	SOUTH EAST ST	BELCHERTOWN RD	East/East	2	0	0	Clear	Dry	Dark - lighted roadway	Sideswipe, same direction
11	15-358-AC	11/24/2015	6:15 AM	SOUTH EAST ST	COLLEGE ST	West/West	2	0	0	Clear	Dry	Dawn	Angle
12	16-11-AC	01/15/2016	4:51 PM	SOUTH EAST ST	COLLEGE ST	North/South	2	2	0	Clear	Dry	Dark - lighted roadway	Head-on
13	16-162-AC	06/05/2016	8:28 PM	SOUTH EAST ST	COLLEGE ST	South/South	2	0	0	Rain	Wet	Dark - lighted roadway	Rear-end
14	16-198-AC	07/28/2016	1:25 PM	SOUTH EAST ST	BELCHERTOWN RD	West/West	2	0	0	Clear	Dry	Daylight	Rear-end
15	16-211-AC	08/11/2016	10:16 AM	SOUTH EAST ST	COLLEGE ST	North	1	1	0	Clear	Dry	Daylight	Single vehicle crash
16	16-307-AC	10/28/2016	10:41 PM	SOUTH EAST ST	COLLEGE ST	North/South	2	0	0	Clear	Dry	Dark - lighted roadway	Sideswipe, opposite direction
17	17-31-AC	01/26/2017	8:54 AM	BELCHERTOWN RD	SOUTH EAST ST	South/South	2	0	0	Cloudy	Wet	Daylight	Rear-end
18	17-109-AC	03/28/2017	8:56 PM	COLLEGE ST	SOUTH EAST ST	North/South	2	0	0	Rain	Wet	Dark - lighted roadway	Angle
19	17-297-AC	10/20/2017	2:07 PM	SOUTH EAST ST	COLLEGE ST	North	1	0	0	Clear	Dry	Daylight	Angle
20	17-284-AC	10/13/2017	12:38 AM	SOUTH EAST ST	COLLEGE ST	South/South	2	1	0	Cloudy/Clear	Dry	Dark - lighted roadway	Rear-end
21	17-335-AC	11/10/2017	2:09 PM	SOUTH EAST ST	COLLEGE ST	South/South	2	0	0	Cloudy	Dry	Daylight	Sideswipe, same direction
22	18-171-AC	05/14/2018	4:30 PM	SOUTH EAST ST	COLLEGE ST	East/East	2	0	0	Clear/Other	Dry	Daylight	Rear-end
23	18-232-AC	07/18/2018	7:52 AM	SOUTH EAST ST	COLLEGE ST	East/East	2	0	0	Clear/Unknown	Dry	Daylight	Rear-end
24	18-242-AC	08/03/2018	2:33 PM	BELCHERTOWN RD	SOUTH EAST ST	West	1	1	0	Cloudy	Dry	Daylight	Angle
25	18-347-AC	10/29/2018	11:07 PM	COLLEGE ST	SOUTH EAST ST	East/East	2	0	0	Clear	Dry	Dark - lighted roadway	Rear-end
26	19-31-AC	02/01/2019	1:30 PM	SOUTH EAST ST	COLLEGE ST	North/Unknown	3	0	0	Clear	Dry	Daylight	Angle
27	19-76-AC	03/09/2019	8:46 AM	SOUTH EAST ST	COLLEGE ST	South/South	2	0	0	Clear	Dry	Daylight	Rear-end
28	19-276-AC	10/08/2019	2:44 PM	SOUTH EAST ST	COLLEGE ST	West/West	2	0	0	Clear	Dry	Daylight	Rear-end
29	19-309-AC	11/05/2019	5:46 PM	COLLEGE ST	SOUTH EAST ST	North/South	2	0	0	Clear	Dry	Dusk	Front to Front
30	15-5-AC	01/06/2015	1:19 PM	NORTH EAST ST	STRONG ST	East/North	2	0	0	Snow/Cloudy	Snow	Daylight	Single vehicle crash
31	15-22-AC	01/18/2015	5:33 PM	NORTH EAST ST	STRONG ST	East/East	2	0	0	Sleet, hail (free Ice		Dark - roadway not lighted	Rear-end
32	15-51-AC	02/05/2015	10:04 AM	NORTH EAST ST	STRONG ST	East/South	2	1	0	Snow	Snow	Daylight	Angle
33	15-246-AC	09/10/2015	7:58 AM	NORTH EAST ST	STRONG ST	North/North	2	1	0	Cloudy	Dry	Daylight	Rear-end
34	15-372-AC	12/11/2015	1:00 PM	NORTH EAST ST	STRONG ST	East/East	2	0	0	Clear	Dry	Daylight	Sideswipe, same direction
35	16-9-AC	01/12/2016	5:47 PM	NORTH EAST ST	STRONG ST	East	1	0	0	Snow	Snow	Dark - lighted roadway	Single vehicle crash
36	16-344-AC	11/30/2016	1:50 AM	NORTH EAST ST	STRONG ST	East	1	0	0	Rain/Fog, smog	Wet	Dark - lighted roadway	Single vehicle crash
37	17-41-AC	02/07/2017	9:59 AM	NORTH EAST ST	STRONG ST	South/North	2	1	0	Snow	Snow	Daylight	Head-on
38	18-294-AC	09/25/2018	11:24 AM	NORTH EAST ST	STRONG ST	South/West	2	0	0	Cloudy/Rain	Wet	Daylight	Angle
39	19-73-AC	03/07/2019	7:29 PM	NORTH EAST ST	STRONG ST	South/South	2	0	0	Clear	Dry	Dark - lighted roadway	Angle

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40	15-84-AC	02/21/2015	6:25 PM	TRIANGLE ST	MAIN STREET	South/South	2	0	0	Snow	Snow	Dark - lighted roadway	Rear-end
41	15-268-AC	09/26/2015	10:30 AM	MAIN ST	TRIANGLE ST	South/South	2	1	0	Clear	Dry	Daylight	Rear-end
42	16-18-AC	01/31/2016	7:53 PM	MAIN ST	TRIANGLE ST	West	1	0	0	Clear	Dry	Dark - lighted roadway	Sideswipe, same direction
43	16-33-AC	02/08/2016	6:24 PM	MAIN ST	TRIANGLE ST	South/South	2	0	0	Snow	Snow	Dark - lighted roadway	Rear-end
44	16-48-AC	02/19/2016	9:28 AM	TRIANGLE ST	MAIN ST	South/South/S	3	0	0	Clear	Dry	Daylight	Rear-end
45	16-88-AC	04/02/2016	7:41 PM	MAIN ST	TRIANGLE ST	South/South	2	0	0	Clear	Wet	Dark - lighted roadway	Rear-end
46	16-163-AC	06/06/2016	6:56 PM	MAIN ST	TRIANGLE ST	South/North	2	0	0	Clear	Dry	Daylight	Sideswipe, opposite direction
47	16-232-AC	08/30/2016	2:31 PM	MAIN ST	TRIANGLE ST	South/North	2	0	0	Clear	Dry	Daylight	Angle
48	17-26-AC	01/23/2017	7:01 PM	MAIN ST	TRIANGLE ST	South	1	0	0	Clear	Dry	Dark - lighted roadway	Single vehicle crash
49	17-57-AC	02/12/2017	12:47 PM	MAIN ST	TRIANGLE ST	East/East	2	0	0	Snow/Blowing	Snow	Daylight	Sideswipe, same direction
50	17-86-AC	03/04/2017	2:52 PM	MAIN ST	TRIANGLE ST	South/South	2	1	0	Clear	Dry	Daylight	Rear-end
51	17-157-AC	05/13/2017	11:59 AM	MAIN ST	TRIANGLE ST	North	1	1	0	Rain/Cloudy	Wet	Daylight	Single vehicle crash
52	17-278-AC	10/09/2017	3:59 PM	MAIN ST	TRIANGLE ST	South/South/S	3	1	0	Rain	Wet	Dusk	Rear-end
53	17-292-AC	10/17/2017	8:53 PM	MAIN ST	TRIANGLE ST	West/West	2	0	0	Clear	Dry	Dark - lighted roadway	Rear-end
54	17-333-AC	11/09/2017	12:04 PM	MAIN ST	TRIANGLE ST	South/South	2	0	0	Clear	Dry	Daylight	Rear-end
55	17-348-AC	11/22/2017	4:44 PM	TRIANGLE ST	MAIN ST	South/South/S	3	2	0	Clear	Dry	Dusk	Rear-end
56	17-356-AC	12/01/2017	5:01 PM	MAIN ST	TRIANGLE ST	South/South	2	0	0	Clear	Dry	Dark - lighted roadway	Rear-end
57	18-52-AC	02/02/2018	3:23 AM	MAIN ST	TRIANGLE ST	South	1	0	0	Snow	Snow	Dark - lighted roadway	Single vehicle crash
58	18-66-AC	02/07/2018	10:52 AM	MAIN ST	TRIANGLE ST	South/South	2	0	0	Snow/Sleet, ha	Snow	Daylight	Rear-end
59	17-381-AC	12/25/2017	8:26 AM	MAIN ST	TRIANGLE ST	South	1	0	0	Snow	Snow	Daylight	Single vehicle crash
60	18-146-AC	04/25/2018	9:17 PM	MAIN ST	TRIANGLE ST	East/East	2	0	0	Rain/Cloudy	Wet	Dark - lighted roadway	Rear-end
61	19-14-AC	01/19/2019	11:38 PM	MAIN ST	TRIANGLE ST	South	1	0	0	Snow	Snow	Dark - lighted roadway	Single vehicle crash
62	19-45-AC	02/12/2019	12:45 PM	MAIN ST	TRIANGLE ST	South/South	2	0	0	Snow/Sleet, ha	Snow	Daylight	Rear-end
63	19-60-AC	02/25/2019	7:00 AM	MAIN ST	TRIANGLE ST	South	1	0	0	Snow/Clear	Snow	Daylight	Single vehicle crash
64	19-253-AC	09/24/2019	10:56 AM	MAIN ST	TRIANGLE ST	West/West	2	0	0	Clear	Dry	Daylight	Sideswipe, same direction
65	19-249-AC	09/21/2019	6:30 PM	MAIN ST	TRIANGLE ST	East	1	0	0	Clear	Dry	Daylight	Sideswipe, same direction
66	19-366-AC	12/17/2019	12:23 PM	MAIN ST	TRIANGLE ST	South	1	0	0	Snow	Snow	Daylight	Single vehicle crash
67	15-12-AC	01/14/2015	4:57 PM	MAIN ST	SOUTH WHITNEY ST	East/South	2	0	0	Clear	Dry	Dusk	Angle
68	15-120-AC	03/26/2015	4:46 PM	MAIN ST	NORTH WHITNEY ST	East/East	2	1	0	Rain	Wet	Daylight	Rear-end
69	16-370-AC	12/22/2016	9:25 AM	MAIN ST	SOUTH WHITNEY ST	East/North	2	0	0	Snow	Snow	Daylight	Angle
70	17-205-AC	07/21/2017	10:46 AM	MAIN ST	SOUTH WHITNEY ST	North/East	2	2	0	Clear	Dry	Daylight	Angle
71	18-31-AC	01/20/2018	3:05 PM	MAIN ST	NORTH WHITNEY ST	North/West	2	0	0	Clear	Dry	Daylight	Angle
72	18-86-AC	02/23/2018	6:41 PM	MAIN ST	SOUTH WHITNEY ST	East/West	2	0	0	Rain	Wet	Dark - lighted roadway	Angle
73	18-159-AC	05/09/2018	5:17 PM	MAIN ST	NORTH WHITNEY ST	East/North	2	0	0	Clear	Dry	Daylight	Angle
74	18-249-AC	08/14/2018	10:52 PM	MAIN ST	NORTH WHITNEY ST	East	1	0	0	Clear	Dry	Dark - lighted roadway	Rear-end
75	18-285-AC	09/18/2018	5:37 PM	MAIN ST	SOUTH WHITNEY ST	East/East	2	1	0	Clear	Dry	Daylight	Single vehicle crash
76	18-418-AC	12/14/2018	4:38 PM	MAIN ST	SOUTH WHITNEY ST	West	1	0	0	Clear	Dry	Dark - lighted roadway	Single vehicle crash
77	15-319-AC	11/02/2015	11:53 AM	MAIN ST	SOUTH EAST ST	North/West	2	0	0	Clear/Cloudy	Dry	Daylight	Angle
78	16-205-AC	08/04/2016	10:05 AM	MAIN ST	SOUTH EAST ST	West/East	2	0	0	Clear	Dry	Daylight	Rear-end

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79	16-324-AC	11/08/2016	4:53 PM	MAIN ST	SOUTH EAST ST	West/East	2	0	0	Clear	Dry	Dark - lighted roadway	Angle
80	17-207-AC	07/24/2017	8:32 AM	MAIN ST	SOUTH EAST ST	South/West	2	0	0	Rain	Wet	Daylight	Angle
81	17-339-AC	11/14/2017	3:56 PM	MAIN ST	SOUTH EAST ST	East/East	2	0	0	Cloudy/Other	Dry	Daylight	Sideswipe, same direction
82	18-300-AC	10/02/2018	4:47 PM	MAIN ST	SOUTH EAST ST	East/South	2	0	0	Rain/Cloudy	Wet	Daylight	Angle
83	19-210-AC	08/15/2019	10:05 AM	MAIN ST	SOUTH EAST ST	West/East	2	0	0	Clear	Dry	Daylight	Head-on
84	19-250-AC	09/22/2019	5:02 PM	MAIN ST	SOUTH EAST ST	North/West	2	0	0	Clear	Dry	Daylight	Rear-end
85	19-221-AC	08/31/2019	5:26 PM	MAIN ST	SOUTH EAST ST	West/West	2	0	0	Clear/Cloudy	Dry	Daylight	Rear-end
86	19-319-AC	11/15/2019	10:50 PM	MAIN ST	SOUTH EAST ST	North/South	2	0	0	Clear	Dry	Dark - lighted roadway	Sideswipe, same direction
87	19-338-AC	11/29/2019	9:11 AM	MAIN ST	SOUTH EAST ST	South/East	2	0	0	Clear	Dry	Daylight	Head-on
88	15-20-AC	01/18/2015	5:25 PM	STRONG ST	WILDWOOD ELEMENTARY	East	1	0	0	Rain/Snow	Ice	Dark - lighted roadway	Single vehicle crash
89	15-27-AC	01/20/2015	7:17 PM	EAST PLEASANT ST	TRIANGLE ST	East/South	2	0	0	Clear	Dry	Dark - lighted roadway	Sideswipe, same direction
90	15-48-AC	02/03/2015	12:59 PM	EAST PLEASANT ST	TRIANGLE ST	East/East	2	0	0	Clear	Snow	Daylight	Sideswipe, same direction
91	15-103-AC	03/06/2015	1:49 PM	EAST PLEASANT ST	TRIANGLE ST	West/South	2	0	0	Clear	Dry	Daylight	Angle
92	15-128-AC	04/09/2015	9:11 AM	TRIANGLE ST	EAST PLEASANT ST	East	1	1	0	Rain	Wet	Daylight	Angle
93	15-130-AC	04/12/2015	11:06 AM	EAST PLEASANT ST	TRIANGLE ST	North/South	2	0	0	Clear	Dry	Daylight	Sideswipe, opposite direction
94	15-165-AC	05/12/2015	7:51 PM	EAST PLEASANT ST	TRIANGLE ST	East/East	2	1	0	Rain	Wet	Daylight	Rear-end
95	15-163-AC	05/09/2015	6:30 PM	EAST PLEASANT ST	TRIANGLE ST	South/South	2	1	0	Clear	Dry	Daylight	Rear-end
96	15-260-AC	09/21/2015	3:17 PM	EAST PLEASANT ST	TRIANGLE ST	West/South	2	0	0	Clear	Dry	Daylight	Angle
97	15-280-AC	10/06/2015	6:24 PM	EAST PLEASANT ST	TRIANGLE ST	North/North	2	0	0	Clear	Dry	Dusk	Rear-end
98	16-59-AC	03/09/2016	1:36 PM	EAST PLEASANT ST	TRIANGLE ST	East/North	2	0	0	Clear	Dry	Daylight	Angle
99	16-77-AC	03/30/2016	6:32 AM	EAST PLEASANT ST	TRIANGLE ST	North/West	2	0	0	Clear	Dry	Daylight	Angle
100	16-164-AC	06/08/2016	8:03 AM	EAST PLEASANT ST	TRIANGLE ST	South/West	2	0	0	Clear	Dry	Daylight	Angle
101	16-218-AC	08/18/2016	12:28 PM	EAST PLEASANT ST	TRIANGLE ST	East/West	2	1	0	Clear	Dry	Daylight	Head-on
102	16-242-AC	09/11/2016	12:17 AM	EAST PLEASANT ST	TRIANGLE ST	North/North	2	0	0	Clear	Dry	Dark - lighted roadway	Rear-end
103	16-239-AC	09/08/2016	8:29 PM	EAST PLEASANT ST	TRIANGLE ST	North/North	2	0	0	Cloudy	Dry	Dark - lighted roadway	Rear-end
104	16-264-AC	10/01/2016	1:49 AM	EAST PLEASANT ST	TRIANGLE ST	North/North	2	0	0	Rain/Unknown	Wet	Dark - lighted roadway	Rear-end
105	16-269-AC	10/04/2016	12:14 PM	EAST PLEASANT ST	TRIANGLE ST	North	1	1	0	Clear	Dry	Daylight	Single vehicle crash
106	16-282-AC	10/14/2016	9:48 PM	EAST PLEASANT ST	TRIANGLE ST	South/North	2	0	0	Clear	Dry	Dark - lighted roadway	Head-on
107	16-329-AC	11/14/2016	7:48 AM	TRIANGLE ST	EAST PLEASANT ST	North/West	2	0	0	Clear	Dry	Daylight	Rear-to-rear
108	17-49-AC	02/10/2017	9:14 PM	EAST PLEASANT ST	TRIANGLE ST	East/East	2	0	0	Clear/Other	Ice	Dark - lighted roadway	Rear-end
109	17-87-AC	03/04/2017	7:24 PM	EAST PLEASANT ST	TRIANGLE ST	North/North	2	0	0	Clear	Dry	Dark - lighted roadway	Rear-end
110	17-172-AC	05/31/2017	1:19 PM	EAST PLEASANT STREET	TRIANGLE ST	North	1	0	0	Cloudy	Dry	Daylight	Sideswipe, same direction
111	17-194-AC	07/06/2017	7:17 PM	EAST PLEASANT STREET	TRIANGLE ST	North	1	1	0	Clear	Dry	Daylight	Single vehicle crash
112	17-233-AC	08/10/2017	10:46 AM	EAST PLEASANT ST	TRIANGLE ST	South/South	2	0	0	Clear	Dry	Daylight	Angle
113	17-321-AC	10/30/2017	7:52 AM	EAST PLEASANT ST	TRIANGLE ST	North/East	2	0	0	Cloudy/Rain	Wet	Daylight	Angle
114	18-124-AC	04/06/2018	4:05 PM	TRIANGLE ST	EAST PLEASANT ST	North/North	3	0	0	Rain/Snow	Wet	Daylight	Sideswipe, same direction
115	15-125-AC	04/03/2015	3:00 PM	EAST PLEASANT ST	STRONG ST	South/South	2	0	0	Clear	Dry	Daylight	Rear-end
116	15-136-AC	04/17/2015	2:44 PM	EAST PLEASANT ST	STRONG ST	South/South	2	0	0	Clear	Dry	Daylight	Rear-end
117	16-60-AC	03/10/2016	6:49 PM	EAST PLEASANT ST	STRONG ST	South/South	2	0	0	Rain	Wet	Dark - roadway not lighted	Rear-end

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118	16-325-AC	11/10/2016	4:08 PM	EAST PLEASANT ST	STRONG ST	South/South	2	0	0	Clear	Dry	Daylight	Rear-end
119	17-18-AC	01/18/2017	12:05 AM	EAST PLEASANT ST	STRONG ST	South	1	1	0	Sleet, hail (free Ice		Dark - lighted roadway	Angle
120	17-258-AC	09/15/2017	12:33 PM	EAST PLEASANT ST	STRONG ST	South/East	2	1	0	Clear	Dry	Daylight	Angle
121	18-155-AC	05/05/2018	1:27 PM	EAST PLEASANT ST	STRONG ST	South/South	2	0	0	Clear	Dry	Daylight	Rear-end
122	18-310-AC	10/05/2018	4:35 PM	EAST PLEASANT ST	STRONG ST	South/South	2	0	0	Clear/Other	Dry	Daylight	Rear-end
123	19-61-AC	02/25/2019	10:08 AM	EAST PLEASANT ST	STRONG ST	North	1	0	0	Clear	Dry	Daylight	Single vehicle crash
124	19-264-AC	09/26/2019	4:40 PM	EAST PLEASANT ST	STRONG ST	South	1	0	0	Rain	Wet	Daylight	Single vehicle crash
125	19-290-AC	10/23/2019	9:02 AM	EAST PLEASANT ST	STRONG ST	North/North	2	0	0	Clear	Wet	Daylight	Rear-end
126	15-292-AC	10/14/2015	12:10 PM	EAST PLEASANT ST	CIARK HILL RD	North/North	2	0	0	Clear/Cloudy	Dry	Daylight	Rear-end
127	16-285-AC	10/16/2016	12:59 PM	EAST PLEASANT ST	CLARK HILL RD	North	1	1	0	Clear	Dry	Daylight	Single vehicle crash
128	17-2-AC	01/04/2017	7:04 AM	EAST PLEASANT ST	CIARK HILL RD	North/North	2	0	0	Rain	Wet	Daylight	Rear-end
129	17-66-AC	02/14/2017	12:14 PM	EAST PLEASANT ST	CIARK HILL RD	South/East	2	0	0	Clear	Dry	Daylight	Angle
130	17-82-AC	03/01/2017	3:33 PM	EAST PLEASANT ST	CIARK HILL RD	South/South/N	3	0	0	Cloudy	Dry	Daylight	Head-on
131	17-294-AC	10/18/2017	9:02 AM	EAST PLEASANT ST	CIARK HILL RD	South/East	2	0	0	Clear	Dry	Daylight	Angle
132	18-333-AC	10/21/2018	2:59 PM	EAST PLEASANT ST	CIARK HILL RD	North/North	2	1	0	Clear	Dry	Daylight	Angle
133	19-40-AC	02/05/2019	3:07 PM	EAST PLEASANT ST	CIARK HILL RD	South/South	2	0	0	Clear	Dry	Daylight	Rear-end
134	19-46-AC	02/12/2019	3:25 PM	EAST PLEASANT ST	CIARK HILL RD	South/South	2	0	0	Snow	Snow	Daylight	Rear-end
135	19-272-AC	10/05/2019	9:50 AM	EAST PLEASANT ST	CIARK HILL RD	South/East	2	0	0	Clear	Dry	Daylight	Angle

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Amherst COUNT DATE : Apr-22

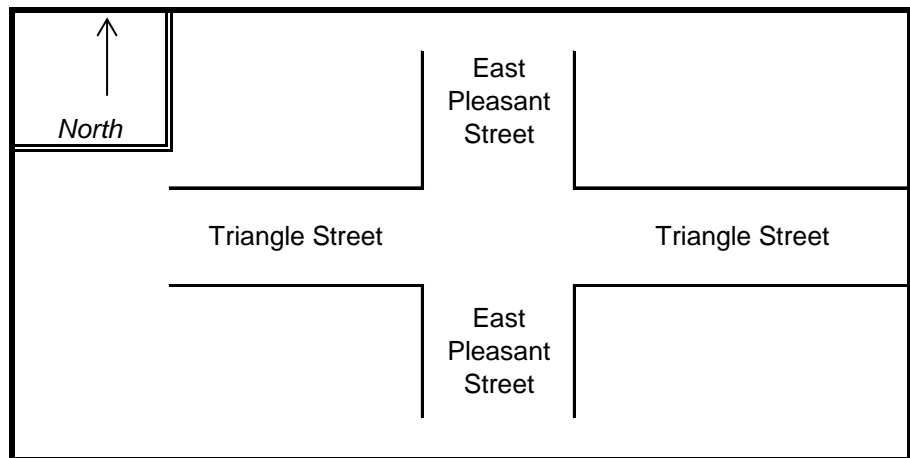
DISTRICT : 2 UNSIGNALIZED : ☒ X SIGNALIZED : ☐

~ INTERSECTION DATA ~

MAJOR STREET : East Pleasant Street

MINOR STREET(S) : Triangle Street

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	SB	EB	WB		
PEAK HOURLY VOLUMES (AM/PM):	409	372	526	600		1,907

" K " FACTOR :

0.090

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

21,189

TOTAL # OF CRASHES :

26

5

AVERAGE # OF CRASHES PER YEAR (A) :

5.20

CRASH RATE CALCULATION :

0.67

RATE =

$$\frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: Pare Project No. 21245.00 Apr-22

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Amherst COUNT DATE : Apr-22

DISTRICT : 2 UNSIGNALIZED : ☐ SIGNALIZED : ☒

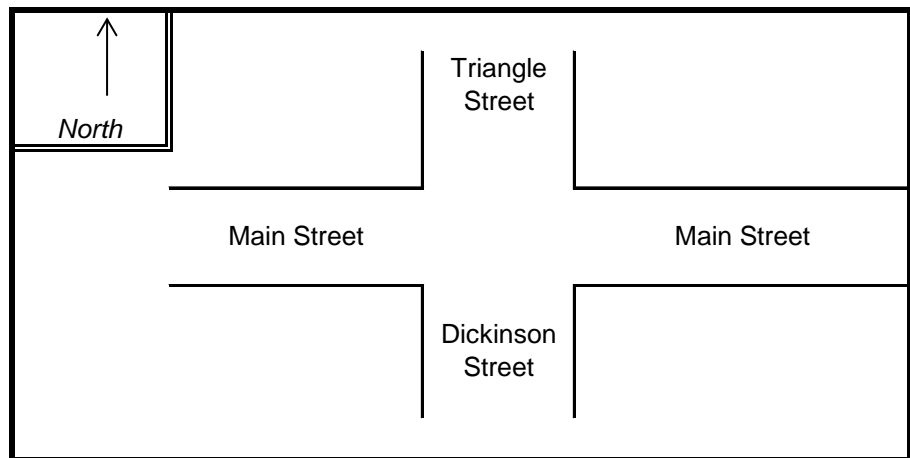
~ INTERSECTION DATA ~

MAJOR STREET : Main Street

MINOR STREET(S) : Triangle Street

Dickinson Street

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	SB	EB	WB		
PEAK HOURLY VOLUMES (AM/PM):	58	437	276	471		1,242

" K " FACTOR :

0.090

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

13,800

TOTAL # OF CRASHES :

27

5

AVERAGE # OF CRASHES PER YEAR (A) :

5.40

CRASH RATE CALCULATION :

1.07

RATE =

$$\frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: Pare Project No. 21245.00 Apr-22

INTERSECTION CRASH RATE WORKSHEET

CITY/TOWN : Amherst COUNT DATE : Apr-22

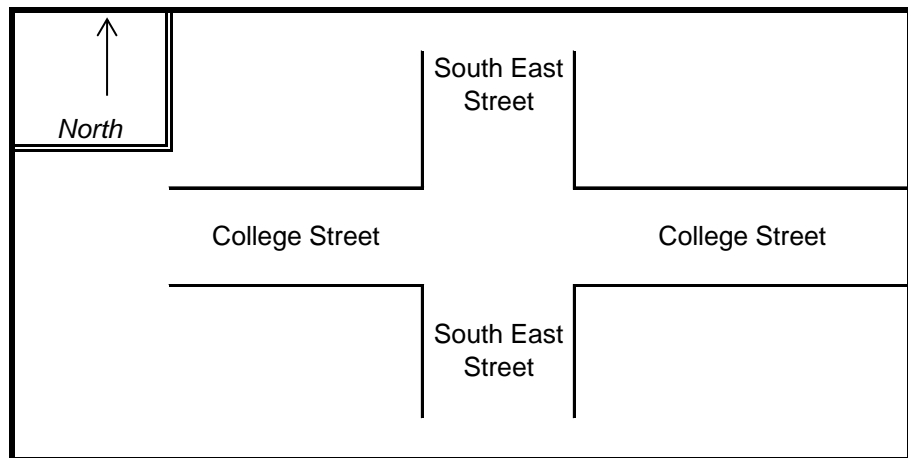
DISTRICT : 2 UNSIGNALIZED : ☐ SIGNALIZED : ☒

~ INTERSECTION DATA ~

MAJOR STREET : South East Street

MINOR STREET(S) : College Street

**INTERSECTION
DIAGRAM**
(Label Approaches)



PEAK HOUR VOLUMES

APPROACH :	1	2	3	4	5	Total Peak Hourly Approach Volume
DIRECTION :	NB	SB	EB	WB		
PEAK HOURLY VOLUMES (AM/PM):	162	594	534	502		1,792

" K " FACTOR :

0.090

INTERSECTION ADT (V) = TOTAL DAILY APPROACH VOLUME :

19,911

TOTAL # OF CRASHES :

23

5

AVERAGE # OF CRASHES PER YEAR (A) :

4.60

CRASH RATE CALCULATION :

0.63

RATE =

$$\frac{(A * 1,000,000)}{(V * 365)}$$

Comments : _____

Project Title & Date: Pare Project No. 21245.00 Apr-22

Appendix C

Automated Traffic Recorder and Speed Study Data





Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDataLLC.com or 413.668.5094

Location: Strong Street
Location: @ Wildwood Elementary
City, State: Amherst, Massachusetts
Client: PARE Corporation

Start Time	12-Apr-22 Tue	Eastbound		Westbound		Combined		13-Apr-Wed	Eastbound		Westbound		Combined	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		5	24	4	11	9	35		4	25	3	36	7	61
12:15		4	23	0	24	4	47		1	30	1	18	2	48
12:30		1	23	1	33	2	56		4	21	0	30	4	51
12:45		3	35	2	34	5	69		0	17	0	18	0	35
01:00		0	50	0	26	0	76		1	20	0	23	1	43
01:15		0	35	0	20	0	55		1	26	0	18	1	44
01:30		0	24	0	15	0	39		1	18	2	17	3	35
01:45		0	19	0	20	0	39		2	29	0	31	2	60
02:00		0	36	0	30	0	66		1	28	1	27	2	55
02:15		0	25	0	43	0	68		0	32	1	28	1	60
02:30		0	39	0	33	0	72		1	39	1	17	2	56
02:45		0	32	0	47	0	79		0	38	0	21	0	59
03:00		0	57	1	19	1	76		0	47	0	16	0	63
03:15		0	31	0	27	0	58		0	26	0	23	0	49
03:30		0	43	0	41	0	84		1	29	1	33	2	62
03:45		0	52	2	25	2	77		0	50	1	33	1	83
04:00		0	49	0	17	0	66		0	49	0	17	0	66
04:15		0	46	0	28	0	74		0	31	0	26	0	57
04:30		1	43	0	24	1	67		1	35	1	21	2	56
04:45		0	44	2	23	2	67		0	41	1	22	1	63
05:00		0	47	2	22	2	69		0	43	1	30	1	73
05:15		2	34	3	16	5	50		4	34	1	33	5	67
05:30		0	49	2	25	2	74		1	41	5	23	6	64
05:45		0	29	8	22	8	51		2	43	10	19	12	62
06:00		0	23	5	28	5	51		0	26	4	19	4	45
06:15		2	29	12	17	14	46		3	24	14	28	17	52
06:30		7	17	20	22	27	39		5	34	22	18	27	52
06:45		2	14	14	18	16	32		9	25	16	18	25	43
07:00		9	18	10	16	19	34		5	23	7	14	12	37
07:15		4	21	19	10	23	31		10	16	22	14	32	30
07:30		11	19	37	10	48	29		11	16	35	14	46	30
07:45		13	12	53	11	66	23		15	16	55	9	70	25
08:00		25	11	61	5	86	16		25	16	51	6	76	22
08:15		21	10	62	16	83	26		24	16	43	11	67	27
08:30		10	15	51	10	61	25		7	18	47	7	54	25
08:45		12	14	48	7	60	21		11	5	52	5	63	10
09:00		13	8	32	9	45	17		16	17	35	8	51	25
09:15		14	15	25	5	39	20		18	13	32	6	50	19
09:30		12	12	44	8	56	20		14	6	23	3	37	9
09:45		22	11	39	7	61	18		10	6	32	4	42	10
10:00		22	6	18	4	40	10		14	9	20	6	34	15
10:15		9	5	23	3	32	8		17	8	19	7	36	15
10:30		12	8	15	8	27	16		9	4	18	5	27	9
10:45		14	5	23	2	37	7		9	9	31	7	40	16
11:00		19	8	42	2	61	10		22	9	20	4	42	13
11:15		27	6	19	1	46	7		16	5	21	1	37	6
11:30		16	1	17	3	33	4		13	7	19	4	32	11
11:45		6	6	20	2	26	8		15	5	25	0	40	5
Total		318	1183	736	849	1054	2032		323	1125	693	798	1016	1923
Day Total		1501		1585		3086			1448		1491		2939	
% Total		10.3%	38.3%	23.8%	27.5%				11.0%	38.3%	23.6%	27.2%		
Peak	-	10:45	03:30	07:45	02:00	07:45	03:30	-	07:30	03:45	07:45	03:30	07:45	03:30
Vol.	-	76	190	227	153	296	301	-	75	165	196	109	267	268
P.H.F.		0.704	0.913	0.915	0.814	0.860	0.896		0.750	0.825	0.891	0.826	0.878	0.807
ADT	ADT 3,012	AADT 3,012												



Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDataIc.com or 413.668.5094

Location: Strong Street
 Location: @ Wildwood Elementary
 City, State: Amherst, Massachusetts
 Client: PARE Corporation

Eastbound																	
Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	85th Percent	95th Percent
04/12/22	0	0	0	3	7	3	0	0	0	0	0	0	0	0	13	36	38
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
04:00	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	29	29
05:00	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2	28	29
06:00	1	0	0	5	2	1	1	0	0	0	1	0	0	0	11	41	62
07:00	0	1	3	11	20	1	1	0	0	0	0	0	0	0	37	34	35
08:00	0	6	25	20	14	3	0	0	0	0	0	0	0	0	68	32	34
09:00	0	0	6	13	32	9	1	0	0	0	0	0	0	0	61	35	38
10:00	1	0	6	17	28	4	1	0	0	0	0	0	0	0	57	34	37
11:00	0	3	4	27	26	7	1	0	0	0	0	0	0	0	68	34	38
12 PM	0	0	11	26	52	15	1	0	0	0	0	0	0	0	105	35	38
13:00	2	6	30	42	40	7	1	0	0	0	0	0	0	0	128	33	36
14:00	7	7	11	39	54	11	3	0	0	0	0	0	0	0	132	34	38
15:00	1	3	20	51	70	31	6	1	0	0	0	0	0	0	183	36	39
16:00	1	3	8	35	100	33	2	0	0	0	0	0	0	0	182	36	38
17:00	1	3	4	40	88	21	2	0	0	0	0	0	0	0	159	34	38
18:00	0	1	3	21	41	15	2	0	0	0	0	0	0	0	83	36	39
19:00	0	1	9	19	26	13	0	2	0	0	0	0	0	0	70	36	39
20:00	0	1	3	16	20	8	1	1	0	0	0	0	0	0	50	36	39
21:00	0	0	1	13	23	7	1	1	0	0	0	0	0	0	46	36	39
22:00	0	0	2	5	11	6	0	0	0	0	0	0	0	0	24	37	39
23:00	0	0	1	8	8	2	1	1	0	0	0	0	0	0	21	37	44
Total	14	35	148	413	662	197	25	6	0	0	1	0	0	0	1501		
Percent	0.9%	2.3%	9.9%	27.5%	44.1%	13.1%	1.7%	0.4%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%			
AM Peak	06:00	08:00	08:00	11:00	09:00	09:00	06:00				06:00				08:00		
Vol.	1	6	25	27	32	9	1				1				68		
PM Peak	14:00	14:00	13:00	15:00	16:00	16:00	15:00	19:00							15:00		
Vol.	7	7	30	51	100	33	6	2							183		



Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDataIc.com or 413.668.5094

Location: Strong Street
Location: @ Wildwood Elementary
City, State: Amherst, Massachusetts
Client: PARE Corporation

Eastbound																	
Start	1	16	21	26	31	36	41	46	51	56	61	66	71	76		85th	95th
Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	Percent	Percent
04/13/22	0	0	0	2	3	4	0	0	0	0	0	0	0	0	9	38	39
01:00	0	0	1	3	1	0	0	0	0	0	0	0	0	0	5	31	33
02:00	0	0	0	1	1	0	0	0	0	0	0	0	0	0	2	33	34
03:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	34	34
04:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	34	34
05:00	0	1	2	1	3	0	0	0	0	0	0	0	0	0	7	33	34
06:00	0	0	2	5	6	4	0	0	0	0	0	0	0	0	17	36	38
07:00	0	0	6	13	17	4	1	0	0	0	0	0	0	0	41	34	38
08:00	2	7	19	24	12	3	0	0	0	0	0	0	0	0	67	32	34
09:00	0	1	5	20	24	8	0	0	0	0	0	0	0	0	58	34	38
10:00	0	2	6	14	19	8	0	0	0	0	0	0	0	0	49	35	38
11:00	0	0	7	11	35	11	2	0	0	0	0	0	0	0	66	36	39
12 PM	0	2	5	24	53	7	2	0	0	0	0	0	0	0	93	34	38
13:00	3	11	19	29	23	6	2	0	0	0	0	0	0	0	93	33	37
14:00	3	10	20	43	51	9	0	1	0	0	0	0	0	0	137	33	36
15:00	0	4	26	40	66	13	3	0	0	0	0	0	0	0	152	34	38
16:00	0	0	16	65	64	10	1	0	0	0	0	0	0	0	156	34	36
17:00	3	5	15	63	64	10	1	0	0	0	0	0	0	0	161	33	36
18:00	0	2	8	33	57	9	0	0	0	0	0	0	0	0	109	34	36
19:00	0	0	5	27	29	10	0	0	0	0	0	0	0	0	71	34	38
20:00	0	1	1	22	22	8	1	0	0	0	0	0	0	0	55	35	38
21:00	0	0	1	21	13	7	0	0	0	0	0	0	0	0	42	35	38
22:00	0	0	1	11	13	5	0	0	0	0	0	0	0	0	30	35	38
23:00	0	0	2	10	8	5	1	0	0	0	0	0	0	0	26	37	39
Total	11	46	167	482	586	141	14	1	0	0	0	0	0	0	1448		
Percent	0.8%	3.2%	11.5%	33.3%	40.5%	9.7%	1.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	08:00	11:00	11:00	11:00								08:00		
Vol.	2	7	19	24	35	11	2								67		
PM Peak	13:00	13:00	15:00	16:00	15:00	15:00	15:00	14:00							17:00		
Vol.	3	11	26	65	66	13	3	1							161		
Grand Total	25	81	315	895	1248	338	39	7	0	0	1	0	0	0	2949		
Percent	0.8%	2.7%	10.7%	30.3%	42.3%	11.5%	1.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
			15th Percentile :		25 MPH												
			50th Percentile :		30 MPH												
			85th Percentile :		34 MPH												
			95th Percentile :		38 MPH												

Statistics

10 MPH Pace Speed :	26-35 MPH
Number in Pace :	2143
Percent in Pace :	72.7%
Number of Vehicles > 40 MPH :	47
Percent of Vehicles > 40 MPH :	1.6%
Mean Speed(Average) :	31 MPH



Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDataIc.com or 413.668.5094

Location: Strong Street
Location: @ Wildwood Elementary
City, State: Amherst, Massachusetts
Client: PARE Corporation

Westbound

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	85th Percent	95th Percent
04/12/22	0	0	0	1	0	4	2	0	0	0	0	0	0	0	7	42	44
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	1	2	0	0	0	0	0	0	0	0	3	38	39
04:00	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	39	39
05:00	0	1	1	1	2	8	2	0	0	0	0	0	0	0	15	39	43
06:00	0	0	0	2	12	30	7	0	0	0	0	0	0	0	51	39	43
07:00	2	4	12	22	31	37	9	1	1	0	0	0	0	0	119	39	42
08:00	3	14	46	54	62	35	7	1	0	0	0	0	0	0	222	36	39
09:00	0	0	1	12	37	54	28	8	0	0	0	0	0	0	140	42	45
10:00	0	0	4	7	17	34	16	1	0	0	0	0	0	0	79	41	44
11:00	0	0	3	9	30	30	20	6	0	0	0	0	0	0	98	42	45
12 PM	1	0	2	12	25	42	17	2	1	0	0	0	0	0	102	41	44
13:00	5	1	17	15	18	14	10	0	1	0	0	0	0	0	81	39	43
14:00	1	4	25	36	55	21	9	1	1	0	0	0	0	0	153	37	41
15:00	1	3	2	17	33	34	19	3	0	0	0	0	0	0	112	41	44
16:00	0	0	3	10	22	31	22	3	1	0	0	0	0	0	92	42	44
17:00	0	1	2	2	32	31	13	3	0	1	0	0	0	0	85	41	44
18:00	0	0	3	17	27	23	13	2	0	0	0	0	0	0	85	40	44
19:00	0	0	2	4	15	13	12	1	0	0	0	0	0	0	47	42	44
20:00	0	0	0	3	11	17	5	2	0	0	0	0	0	0	38	41	45
21:00	0	0	0	1	8	12	5	2	1	0	0	0	0	0	29	43	48
22:00	0	1	0	0	3	8	3	2	0	0	0	0	0	0	17	44	47
23:00	0	0	0	0	2	3	2	1	0	0	0	0	0	0	8	44	47
Total	13	29	123	225	443	485	221	39	6	1	0	0	0	0	1585		
Percent	0.8%	1.8%	7.8%	14.2%	27.9%	30.6%	13.9%	2.5%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	08:00	08:00	09:00	09:00	09:00	07:00						08:00		
Vol.	3	14	46	54	62	54	28	8	1						222		
PM Peak	13:00	14:00	14:00	14:00	14:00	12:00	16:00	15:00	12:00	17:00					14:00		
Vol.	5	4	25	36	55	42	22	3	1	1					153		



Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDataIc.com or 413.668.5094

Location: Strong Street
Location: @ Wildwood Elementary
City, State: Amherst, Massachusetts
Client: PARE Corporation

Westbound

Start Time	15	20	25	30	35	40	45	50	55	60	65	70	75	999	Total	85th Percent	95th Percent
04/13/22	0	0	0	0	0	1	1	2	0	0	0	0	0	0	4	48	49
01:00	0	0	0	0	0	1	0	1	0	0	0	0	0	0	2	48	49
02:00	0	0	0	0	1	2	0	0	0	0	0	0	0	0	3	38	39
03:00	0	0	0	0	0	2	0	0	0	0	0	0	0	0	2	39	39
04:00	0	0	0	0	0	1	1	0	0	0	0	0	0	0	2	43	44
05:00	0	0	2	2	7	6	0	0	0	0	0	0	0	0	17	37	39
06:00	0	0	0	1	17	26	12	0	0	0	0	0	0	0	56	41	43
07:00	0	3	5	29	30	33	16	2	1	0	0	0	0	0	119	40	44
08:00	1	7	33	38	55	45	13	1	0	0	0	0	0	0	193	38	41
09:00	0	1	2	11	48	44	13	3	0	0	0	0	0	0	122	39	43
10:00	1	0	1	10	28	25	16	6	1	0	0	0	0	0	88	43	47
11:00	0	0	1	6	23	31	19	5	0	0	0	0	0	0	85	42	45
12 PM	0	0	4	16	18	39	19	5	1	0	0	0	0	0	102	42	45
13:00	2	0	1	13	32	32	5	4	0	0	0	0	0	0	89	39	44
14:00	1	3	11	18	26	26	7	1	0	0	0	0	0	0	93	38	42
15:00	0	0	6	16	36	30	14	2	0	1	0	0	0	0	105	40	44
16:00	0	0	4	17	28	27	6	3	0	1	0	0	0	0	86	39	44
17:00	1	3	10	16	34	26	12	2	1	0	0	0	0	0	105	39	44
18:00	0	0	5	8	28	24	14	3	1	0	0	0	0	0	83	41	44
19:00	0	0	3	11	13	13	8	3	0	0	0	0	0	0	51	42	45
20:00	0	0	0	4	10	6	7	2	0	0	0	0	0	0	29	43	46
21:00	0	0	0	1	3	13	3	1	0	0	0	0	0	0	21	41	44
22:00	0	0	0	1	5	14	1	3	1	0	0	0	0	0	25	45	49
23:00	0	0	0	0	4	1	3	0	0	0	0	0	1	0	9	44	72
Total	6	17	88	218	446	468	190	49	6	2	0	0	1	0	1491		
Percent	0.4%	1.1%	5.9%	14.6%	29.9%	31.4%	12.7%	3.3%	0.4%	0.1%	0.0%	0.0%	0.1%	0.0%			
AM Peak	08:00	08:00	08:00	08:00	08:00	08:00	11:00	10:00	07:00						08:00		
Vol.	1	7	33	38	55	45	19	6	1						193		
PM Peak	13:00	14:00	14:00	14:00	15:00	12:00	12:00	12:00	12:00	15:00			23:00		15:00		
Vol.	2	3	11	18	36	39	19	5	1	1			1		105		
Grand Total	19	46	211	443	889	953	411	88	12	3	0	0	1	0	3076		
Percent	0.6%	1.5%	6.9%	14.4%	28.9%	31.0%	13.4%	2.9%	0.4%	0.1%	0.0%	0.0%	0.0%	0.0%			
			15th Percentile :		27 MPH												
			50th Percentile :		34 MPH												
			85th Percentile :		40 MPH												
			95th Percentile :		44 MPH												

Statistics

10 MPH Pace Speed : 31-40 MPH
Number in Pace : 1842
Percent in Pace : 59.9%
Number of Vehicles > 40 MPH : 515
Percent of Vehicles > 40 MPH : 16.7%
Mean Speed(Average) : 35 MPH



Location: Strong Street
 Location: @ Wildwood Elementary
 City, State: Amherst, Massachusetts
 Client: PARE Corporation

Innovative Data, LLC

P.O. Pox 468
 Belchertown, Massachusetts
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Eastbound, Westbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
04/12/22	0	0	0	4	7	7	2	0	0	0	0	0	0	0	20	39	42
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	*	*
03:00	0	0	0	0	1	2	0	0	0	0	0	0	0	0	3	38	39
04:00	0	0	0	1	0	2	0	0	0	0	0	0	0	0	3	38	39
05:00	0	1	2	2	2	8	2	0	0	0	0	0	0	0	17	39	42
06:00	1	0	0	7	14	31	8	0	0	0	1	0	0	0	62	39	43
07:00	2	5	15	33	51	38	10	1	1	0	0	0	0	0	156	38	42
08:00	3	20	71	74	76	38	7	1	0	0	0	0	0	0	290	35	39
09:00	0	0	7	25	69	63	29	8	0	0	0	0	0	0	201	41	44
10:00	1	0	10	24	45	38	17	1	0	0	0	0	0	0	136	39	43
11:00	0	3	7	36	56	37	21	6	0	0	0	0	0	0	166	40	44
12 PM	1	0	13	38	77	57	18	2	1	0	0	0	0	0	207	39	42
13:00	7	7	47	57	58	21	11	0	1	0	0	0	0	0	209	35	40
14:00	8	11	36	75	109	32	12	1	1	0	0	0	0	0	285	35	39
15:00	2	6	22	68	103	65	25	4	0	0	0	0	0	0	295	38	42
16:00	1	3	11	45	122	64	24	3	1	0	0	0	0	0	274	38	42
17:00	1	4	6	42	120	52	15	3	0	1	0	0	0	0	244	38	42
18:00	0	1	6	38	68	38	15	2	0	0	0	0	0	0	168	38	42
19:00	0	1	11	23	41	26	12	3	0	0	0	0	0	0	117	39	43
20:00	0	1	3	19	31	25	6	3	0	0	0	0	0	0	88	39	43
21:00	0	0	1	14	31	19	6	3	1	0	0	0	0	0	75	39	45
22:00	0	1	2	5	14	14	3	2	0	0	0	0	0	0	41	39	44
23:00	0	0	1	8	10	5	3	2	0	0	0	0	0	0	29	41	46
Total	27	64	271	638	1105	682	246	45	6	1	1	0	0	0	3086		
Percent	0.9%	2.1%	8.8%	20.7%	35.8%	22.1%	8.0%	1.5%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	08:00	08:00	09:00	09:00	09:00	07:00		06:00				08:00		
Vol.	3	20	71	74	76	63	29	8	1		1				290		
PM Peak	14:00	14:00	13:00	14:00	16:00	15:00	15:00	15:00	12:00	17:00					15:00		
Vol.	8	11	47	75	122	65	25	4	1	1					295		



Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDataLLC.com or 413.668.5094

Location: Strong Street
Location: @ Wildwood Elementary
City, State: Amherst, Massachusetts
Client: PARE Corporation

Eastbound, Westbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
04/13/22	0	0	0	2	3	5	1	2	0	0	0	0	0	0	13	45	48
01:00	0	0	1	3	1	1	0	1	0	0	0	0	0	0	7	39	48
02:00	0	0	0	1	2	2	0	0	0	0	0	0	0	0	5	38	39
03:00	0	0	0	0	1	2	0	0	0	0	0	0	0	0	3	38	39
04:00	0	0	0	0	1	1	1	0	0	0	0	0	0	0	3	42	44
05:00	0	1	4	3	10	6	0	0	0	0	0	0	0	0	24	37	39
06:00	0	0	2	6	23	30	12	0	0	0	0	0	0	0	73	40	43
07:00	0	3	11	42	47	37	17	2	1	0	0	0	0	0	160	39	43
08:00	3	14	52	62	67	48	13	1	0	0	0	0	0	0	260	37	40
09:00	0	2	7	31	72	52	13	3	0	0	0	0	0	0	180	38	42
10:00	1	2	7	24	47	33	16	6	1	0	0	0	0	0	137	40	45
11:00	0	0	8	17	58	42	21	5	0	0	0	0	0	0	151	40	44
12 PM	0	2	9	40	71	46	21	5	1	0	0	0	0	0	195	39	44
13:00	5	11	20	42	55	38	7	4	0	0	0	0	0	0	182	37	41
14:00	4	13	31	61	77	35	7	2	0	0	0	0	0	0	230	36	39
15:00	0	4	32	56	102	43	17	2	0	1	0	0	0	0	257	37	42
16:00	0	0	20	82	92	37	7	3	0	1	0	0	0	0	242	36	39
17:00	4	8	25	79	98	36	13	2	1	0	0	0	0	0	266	36	41
18:00	0	2	13	41	85	33	14	3	1	0	0	0	0	0	192	38	43
19:00	0	0	8	38	42	23	8	3	0	0	0	0	0	0	122	38	43
20:00	0	1	1	26	32	14	8	2	0	0	0	0	0	0	84	39	43
21:00	0	0	1	22	16	20	3	1	0	0	0	0	0	0	63	38	41
22:00	0	0	1	12	18	19	1	3	1	0	0	0	0	0	55	39	47
23:00	0	0	2	10	12	6	4	0	0	0	0	0	1	0	35	39	44
Total	17	63	255	700	1032	609	204	50	6	2	0	0	1	0	2939		
Percent	0.6%	2.1%	8.7%	23.8%	35.1%	20.7%	6.9%	1.7%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	08:00	08:00	09:00	09:00	11:00	10:00	07:00						08:00		
Vol.	3	14	52	62	72	52	21	6	1						260		
PM Peak	13:00	14:00	15:00	16:00	15:00	12:00	12:00	12:00	12:00	15:00			23:00		17:00		
Vol.	5	13	32	82	102	46	21	5	1	1			1		266		
Grand Total	44	127	526	1338	2137	1291	450	95	12	3	1	0	1	0	6025		
Percent	0.7%	2.1%	8.7%	22.2%	35.5%	21.4%	7.5%	1.6%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 25 MPH
50th Percentile : 32 MPH
85th Percentile : 38 MPH
95th Percentile : 42 MPH

Statistics
10 MPH Pace Speed : 26-35 MPH
Number in Pace : 3475
Percent in Pace : 57.7%
Number of Vehicles > 40 MPH : 562
Percent of Vehicles > 40 MPH : 9.3%
Mean Speed(Average) : 33 MPH



Location: Strong Street
 Location: @ Wildwood Elementary
 City, State: Amherst, Massachusetts
 Client: PARE Corporation

Innovative Data, LLC

P.O. Pox 468
 Belchertown, Massachusetts
 InnovativeDataIc.com or 413.668.5094

Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/12/22	0	13	0	0	0	0	0	0	0	0	0	0	0	0	13
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
05:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
06:00	0	10	0	0	0	0	1	0	0	0	0	0	0	0	11
07:00	0	28	4	2	3	0	0	0	0	0	0	0	0	0	37
08:00	0	53	10	1	4	0	0	0	0	0	0	0	0	0	68
09:00	0	52	5	1	3	0	0	0	0	0	0	0	0	0	61
10:00	0	46	8	0	3	0	0	0	0	0	0	0	0	0	57
11:00	0	59	7	0	2	0	0	0	0	0	0	0	0	0	68
12 PM	1	89	11	1	3	0	0	0	0	0	0	0	0	0	105
13:00	1	107	19	0	1	0	0	0	0	0	0	0	0	0	128
14:00	3	108	14	2	4	1	0	0	0	0	0	0	0	0	132
15:00	2	155	20	1	4	1	0	0	0	0	0	0	0	0	183
16:00	1	166	13	0	2	0	0	0	0	0	0	0	0	0	182
17:00	0	148	8	1	1	0	0	0	0	0	0	0	0	1	159
18:00	1	78	2	0	2	0	0	0	0	0	0	0	0	0	83
19:00	0	66	3	0	1	0	0	0	0	0	0	0	0	0	70
20:00	0	45	2	0	3	0	0	0	0	0	0	0	0	0	50
21:00	0	42	1	0	2	1	0	0	0	0	0	0	0	0	46
22:00	0	22	2	0	0	0	0	0	0	0	0	0	0	0	24
23:00	0	17	4	0	0	0	0	0	0	0	0	0	0	0	21
Total	9	1307	133	9	38	3	1	0	0	0	0	0	0	1	1501
Percent	0.6%	87.1%	8.9%	0.6%	2.5%	0.2%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	
AM Peak		11:00	08:00	07:00	08:00		06:00								
Vol.		59	10	2	4		1								
PM Peak	14:00	16:00	15:00	14:00	14:00	14:00								17:00	
Vol.	3	166	20	2	4	1								1	



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Eastbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/13/22	0	8	1	0	0	0	0	0	0	0	0	0	0	0	9
01:00	0	5	0	0	0	0	0	0	0	0	0	0	0	0	5
02:00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
03:00	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
04:00	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
05:00	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
06:00	0	15	2	0	0	0	0	0	0	0	0	0	0	0	17
07:00	0	29	8	1	3	0	0	0	0	0	0	0	0	0	41
08:00	1	52	8	2	4	0	0	0	0	0	0	0	0	0	67
09:00	0	47	8	1	2	0	0	0	0	0	0	0	0	0	58
10:00	1	41	4	0	3	0	0	0	0	0	0	0	0	0	49
11:00	0	55	8	0	3	0	0	0	0	0	0	0	0	0	66
12 PM	0	78	13	0	2	0	0	0	0	0	0	0	0	0	93
13:00	2	76	10	0	5	0	0	0	0	0	0	0	0	0	93
14:00	1	107	19	2	5	2	0	1	0	0	0	0	0	0	137
15:00	1	124	19	3	3	0	0	0	1	0	0	0	0	1	152
16:00	1	144	10	0	1	0	0	0	0	0	0	0	0	0	156
17:00	1	148	9	1	2	0	0	0	0	0	0	0	0	0	161
18:00	0	103	5	0	1	0	0	0	0	0	0	0	0	0	109
19:00	1	68	1	0	1	0	0	0	0	0	0	0	0	0	71
20:00	0	54	1	0	0	0	0	0	0	0	0	0	0	0	55
21:00	0	41	1	0	0	0	0	0	0	0	0	0	0	0	42
22:00	0	30	0	0	0	0	0	0	0	0	0	0	0	0	30
23:00	0	22	4	0	0	0	0	0	0	0	0	0	0	0	26
Total	9	1255	133	10	36	2	0	1	1	0	0	0	0	1	1448
Percent	0.6%	86.7%	9.2%	0.7%	2.5%	0.1%	0.0%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	
AM Peak	08:00	11:00	07:00	08:00	08:00										
Vol.	1	55	8	2	4										
PM Peak	13:00	17:00	14:00	15:00	13:00	14:00		14:00	15:00					15:00	
Vol.	2	148	19	3	5	2		1	1					1	
Grand Total	18	2562	266	19	74	5	1	1	1	0	0	0	0	2	2949
Percent	0.6%	86.9%	9.0%	0.6%	2.5%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.1%	



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Belchertown, Massachusetts

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Location: Strong Street
 Location: @ Wildwood Elementary
 City, State: Amherst, Massachusetts
 Client: PARE Corporation

Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/12/22	0	6	1	0	0	0	0	0	0	0	0	0	0	0	7
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
05:00	0	8	5	0	1	0	0	1	0	0	0	0	0	0	15
06:00	0	27	15	1	8	0	0	0	0	0	0	0	0	0	51
07:00	0	92	20	0	7	0	0	0	0	0	0	0	0	0	119
08:00	0	181	31	2	8	0	0	0	0	0	0	0	0	0	222
09:00	0	113	19	0	7	0	0	1	0	0	0	0	0	0	140
10:00	0	58	16	0	4	0	0	1	0	0	0	0	0	0	79
11:00	0	76	21	0	1	0	0	0	0	0	0	0	0	0	98
12 PM	0	86	8	0	6	1	0	1	0	0	0	0	0	0	102
13:00	2	63	9	0	6	0	0	0	1	0	0	0	0	0	81
14:00	1	122	24	1	4	0	0	1	0	0	0	0	0	0	153
15:00	1	88	17	0	6	0	0	0	0	0	0	0	0	0	112
16:00	0	75	11	1	4	1	0	0	0	0	0	0	0	0	92
17:00	0	71	9	0	5	0	0	0	0	0	0	0	0	0	85
18:00	1	68	13	0	3	0	0	0	0	0	0	0	0	0	85
19:00	0	44	3	0	0	0	0	0	0	0	0	0	0	0	47
20:00	0	33	4	0	1	0	0	0	0	0	0	0	0	0	38
21:00	0	24	5	0	0	0	0	0	0	0	0	0	0	0	29
22:00	0	13	3	0	1	0	0	0	0	0	0	0	0	0	17
23:00	0	8	0	0	0	0	0	0	0	0	0	0	0	0	8
Total	5	1260	235	5	72	2	0	5	1	0	0	0	0	0	1585
Percent	0.3%	79.5%	14.8%	0.3%	4.5%	0.1%	0.0%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		08:00	08:00	08:00	06:00			05:00							
Vol.		181	31	2	8			1							
PM Peak	13:00	14:00	14:00	14:00	12:00	12:00		12:00	13:00						
Vol.	2	122	24	1	6	1		1	1						



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 Client: PARE Corporation

Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/13/22	0	3	1	0	0	0	0	0	0	0	0	0	0	0	4
01:00	0	2	0	0	0	0	0	0	0	0	0	0	0	0	2
02:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
03:00	0	1	1	0	0	0	0	0	0	0	0	0	0	0	2
04:00	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
05:00	0	8	7	0	2	0	0	0	0	0	0	0	0	0	17
06:00	0	36	11	1	8	0	0	0	0	0	0	0	0	0	56
07:00	0	87	25	0	7	0	0	0	0	0	0	0	0	0	119
08:00	1	150	32	1	8	1	0	0	0	0	0	0	0	0	193
09:00	1	100	13	2	6	0	0	0	0	0	0	0	0	0	122
10:00	0	67	14	0	6	0	0	1	0	0	0	0	0	0	88
11:00	0	72	8	0	5	0	0	0	0	0	0	0	0	0	85
12 PM	2	83	14	0	3	0	0	0	0	0	0	0	0	0	102
13:00	0	77	8	0	4	0	0	0	0	0	0	0	0	0	89
14:00	0	66	22	1	2	1	0	1	0	0	0	0	0	0	93
15:00	0	82	19	0	3	0	0	0	0	1	0	0	0	0	105
16:00	0	72	10	2	2	0	0	0	0	0	0	0	0	0	86
17:00	1	93	8	1	1	0	0	1	0	0	0	0	0	0	105
18:00	0	71	9	0	3	0	0	0	0	0	0	0	0	0	83
19:00	1	41	7	0	2	0	0	0	0	0	0	0	0	0	51
20:00	0	27	1	0	1	0	0	0	0	0	0	0	0	0	29
21:00	0	15	4	0	2	0	0	0	0	0	0	0	0	0	21
22:00	0	19	4	0	2	0	0	0	0	0	0	0	0	0	25
23:00	0	8	1	0	0	0	0	0	0	0	0	0	0	0	9
Total	6	1183	221	8	67	2	0	3	0	1	0	0	0	0	1491
Percent	0.4%	79.3%	14.8%	0.5%	4.5%	0.1%	0.0%	0.2%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	08:00	09:00	06:00	08:00		10:00							
Vol.	1	150	32	2	8	1		1							
PM Peak	12:00	17:00	14:00	16:00	13:00	14:00		14:00		15:00					
Vol.	2	93	22	2	4	1		1		1					
Grand Total	11	2443	456	13	139	4	0	8	1	1	0	0	0	0	3076
Percent	0.4%	79.4%	14.8%	0.4%	4.5%	0.1%	0.0%	0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	



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Location: Strong Street
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 Client: PARE Corporation

Eastbound, Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/12/22	0	19	1	0	0	0	0	0	0	0	0	0	0	0	20
01:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	3	0	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
05:00	0	10	5	0	1	0	0	1	0	0	0	0	0	0	17
06:00	0	37	15	1	8	0	1	0	0	0	0	0	0	0	62
07:00	0	120	24	2	10	0	0	0	0	0	0	0	0	0	156
08:00	0	234	41	3	12	0	0	0	0	0	0	0	0	0	290
09:00	0	165	24	1	10	0	0	1	0	0	0	0	0	0	201
10:00	0	104	24	0	7	0	0	1	0	0	0	0	0	0	136
11:00	0	135	28	0	3	0	0	0	0	0	0	0	0	0	166
12 PM	1	175	19	1	9	1	0	1	0	0	0	0	0	0	207
13:00	3	170	28	0	7	0	0	0	1	0	0	0	0	0	209
14:00	4	230	38	3	8	1	0	1	0	0	0	0	0	0	285
15:00	3	243	37	1	10	1	0	0	0	0	0	0	0	0	295
16:00	1	241	24	1	6	1	0	0	0	0	0	0	0	0	274
17:00	0	219	17	1	6	0	0	0	0	0	0	0	0	1	244
18:00	2	146	15	0	5	0	0	0	0	0	0	0	0	0	168
19:00	0	110	6	0	1	0	0	0	0	0	0	0	0	0	117
20:00	0	78	6	0	4	0	0	0	0	0	0	0	0	0	88
21:00	0	66	6	0	2	1	0	0	0	0	0	0	0	0	75
22:00	0	35	5	0	1	0	0	0	0	0	0	0	0	0	41
23:00	0	25	4	0	0	0	0	0	0	0	0	0	0	0	29
Total	14	2567	368	14	110	5	1	5	1	0	0	0	0	1	3086
Percent	0.5%	83.2%	11.9%	0.5%	3.6%	0.2%	0.0%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak		08:00	08:00	08:00	08:00		06:00	05:00							
Vol.		234	41	3	12		1	1							
PM Peak	14:00	15:00	14:00	14:00	15:00	12:00		12:00	13:00					17:00	
Vol.	4	243	38	3	10	1		1	1					1	



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Eastbound, Westbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/13/22	0	11	2	0	0	0	0	0	0	0	0	0	0	0	13
01:00	0	7	0	0	0	0	0	0	0	0	0	0	0	0	7
02:00	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
03:00	0	2	1	0	0	0	0	0	0	0	0	0	0	0	3
04:00	0	0	2	0	1	0	0	0	0	0	0	0	0	0	3
05:00	0	14	8	0	2	0	0	0	0	0	0	0	0	0	24
06:00	0	51	13	1	8	0	0	0	0	0	0	0	0	0	73
07:00	0	116	33	1	10	0	0	0	0	0	0	0	0	0	160
08:00	2	202	40	3	12	1	0	0	0	0	0	0	0	0	260
09:00	1	147	21	3	8	0	0	0	0	0	0	0	0	0	180
10:00	1	108	18	0	9	0	0	1	0	0	0	0	0	0	137
11:00	0	127	16	0	8	0	0	0	0	0	0	0	0	0	151
12 PM	2	161	27	0	5	0	0	0	0	0	0	0	0	0	195
13:00	2	153	18	0	9	0	0	0	0	0	0	0	0	0	182
14:00	1	173	41	3	7	3	0	2	0	0	0	0	0	0	230
15:00	1	206	38	3	6	0	0	0	1	1	0	0	0	1	257
16:00	1	216	20	2	3	0	0	0	0	0	0	0	0	0	242
17:00	2	241	17	2	3	0	0	1	0	0	0	0	0	0	266
18:00	0	174	14	0	4	0	0	0	0	0	0	0	0	0	192
19:00	2	109	8	0	3	0	0	0	0	0	0	0	0	0	122
20:00	0	81	2	0	1	0	0	0	0	0	0	0	0	0	84
21:00	0	56	5	0	2	0	0	0	0	0	0	0	0	0	63
22:00	0	49	4	0	2	0	0	0	0	0	0	0	0	0	55
23:00	0	30	5	0	0	0	0	0	0	0	0	0	0	0	35
Total	15	2438	354	18	103	4	0	4	1	1	0	0	0	1	2939
Percent	0.5%	83.0%	12.0%	0.6%	3.5%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
AM Peak	08:00	08:00	08:00	08:00	08:00	08:00		10:00							
Vol.	2	202	40	3	12	1		1							
PM Peak	12:00	17:00	14:00	14:00	13:00	14:00		14:00	15:00	15:00				15:00	
Vol.	2	241	41	3	9	3		2	1	1				1	
Grand Total	29	5005	722	32	213	9	1	9	2	1	0	0	0	2	6025
Percent	0.5%	83.1%	12.0%	0.5%	3.5%	0.1%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	



Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDataIc.com or 413.668.5094

Location: Strong Street

Location: @ Fort River Elementary

City, State: Amherst, Massachusetts

Client: PARE Corporation

Start Time	12-Apr-22 Tue	Southbound		Northbound		Combined		13-Apr-Wed	Southbound		Northbound		Combined	
		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.		A.M.	P.M.	A.M.	P.M.	A.M.	P.M.
12:00		18	78	8	86	26	164		12	75	9	95	21	170
12:15		3	64	4	77	7	141		10	78	7	102	17	180
12:30		3	75	6	122	9	197		15	84	4	96	19	180
12:45		7	85	5	109	12	194		8	77	5	93	13	170
01:00		6	98	2	96	8	194		5	83	8	98	13	181
01:15		2	83	2	106	4	189		2	88	7	83	9	171
01:30		4	86	1	90	5	176		2	97	3	74	5	171
01:45		1	76	2	105	3	181		3	96	3	98	6	194
02:00		1	95	2	88	3	183		3	96	1	85	4	181
02:15		3	118	1	107	4	225		3	103	4	95	7	198
02:30		0	146	3	85	3	231		2	116	3	75	5	191
02:45		1	113	2	93	3	206		1	114	3	83	4	197
03:00		3	138	2	75	5	213		3	158	4	82	7	240
03:15		1	116	1	98	2	214		0	106	4	106	4	212
03:30		2	135	1	107	3	242		5	137	0	124	5	261
03:45		3	117	3	64	6	181		3	148	3	114	6	262
04:00		0	137	2	85	2	222		0	142	2	86	2	228
04:15		4	84	7	91	11	175		3	130	4	108	7	238
04:30		2	112	9	102	11	214		8	120	13	98	21	218
04:45		5	102	16	69	21	171		5	136	19	120	24	256
05:00		6	112	15	84	21	196		5	142	9	117	14	259
05:15		8	147	21	98	29	245		10	135	22	108	32	243
05:30		16	126	36	107	52	233		6	149	21	100	27	249
05:45		10	100	34	94	44	194		13	113	33	89	46	202
06:00		18	99	43	77	61	176		20	90	44	79	64	169
06:15		24	74	58	109	82	183		22	65	53	60	75	125
06:30		25	75	80	87	105	162		30	78	95	96	125	174
06:45		32	72	78	65	110	137		46	80	72	85	118	165
07:00		50	89	64	62	114	151		40	70	64	83	104	153
07:15		52	66	100	50	152	116		52	75	82	65	134	140
07:30		72	66	99	62	171	128		79	52	115	79	194	131
07:45		100	58	141	55	241	113		80	55	92	65	172	120
08:00		87	48	86	67	173	115		124	49	105	37	229	86
08:15		103	58	77	45	180	103		110	44	104	32	214	76
08:30		65	52	135	38	200	90		54	65	120	45	174	110
08:45		68	44	120	28	188	72		78	44	127	40	205	84
09:00		74	41	117	35	191	76		84	41	123	43	207	84
09:15		59	36	112	36	171	72		54	39	91	34	145	73
09:30		67	44	118	28	185	72		44	45	101	35	145	80
09:45		55	33	108	27	163	60		67	33	80	22	147	55
10:00		69	22	85	22	154	44		74	34	100	29	174	63
10:15		54	18	81	18	135	36		67	31	64	31	131	62
10:30		42	21	82	25	124	46		66	24	98	24	164	48
10:45		69	30	90	17	159	47		56	25	100	24	156	49
11:00		71	21	101	16	172	37		63	24	101	18	164	42
11:15		73	17	87	17	160	34		72	13	79	10	151	23
11:30		66	17	79	5	145	22		64	14	99	13	163	27
11:45		74	11	73	14	147	25		69	8	94	15	163	23
Total		1578	3655	2399	3243	3977	6898		1642	3821	2394	3393	4036	7214
Day Total		5233		5642		10875			5463		5787		11250	
% Total		14.5%	33.6%	22.1%	29.8%				14.6%	34.0%	21.3%	30.2%		
Peak	-	07:30	02:15	08:30	00:30	07:45	02:15	-	07:30	04:45	08:15	04:45	08:00	04:45
Vol.	-	362	515	484	433	794	875	-	393	562	474	445	822	1007
P.H.F.		0.879	0.882	0.896	0.887	0.824	0.947		0.792	0.943	0.933	0.927	0.897	0.961
ADT	ADT 11,055	AADT 11,055												



Location: Strong Street
 Location: @ Fort River Elementary
 City, State: Amherst, Massachusetts
 Client: PARE Corporation

Innovative Data, LLC

P.O. Pox 468
 Belchertown, Massachusetts
 InnovativeDataIc.com or 413.668.5094

Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
04/12/22	0	0	1	5	17	5	3	0	0	0	0	0	0	0	31	38	42
01:00	0	0	1	3	5	4	0	0	0	0	0	0	0	0	13	37	39
02:00	0	0	0	3	0	2	0	0	0	0	0	0	0	0	5	38	39
03:00	1	0	2	1	3	2	0	0	0	0	0	0	0	0	9	36	38
04:00	0	0	1	2	3	5	0	0	0	0	0	0	0	0	11	38	39
05:00	0	1	0	12	19	8	0	0	0	0	0	0	0	0	40	36	38
06:00	0	0	2	19	53	23	2	0	0	0	0	0	0	0	99	37	39
07:00	2	1	20	111	100	38	0	0	1	0	0	0	0	1	274	34	38
08:00	33	25	60	124	66	13	0	0	0	0	0	0	0	2	323	32	34
09:00	3	6	31	93	100	20	1	0	0	0	1	0	0	0	255	34	37
10:00	0	3	10	69	106	41	4	0	0	1	0	0	0	0	234	36	39
11:00	3	7	12	107	108	34	7	1	0	0	1	1	0	3	284	35	39
12 PM	9	2	9	63	154	62	2	1	0	0	0	0	0	0	302	36	39
13:00	2	0	26	110	143	54	7	0	0	0	0	0	0	1	343	35	39
14:00	9	7	57	195	158	42	1	1	0	0	0	0	0	2	472	34	37
15:00	31	32	46	176	173	38	6	0	1	0	0	0	0	3	506	34	37
16:00	37	19	45	156	138	32	2	1	0	0	0	0	0	5	435	33	37
17:00	13	11	32	183	208	27	5	0	2	0	1	0	0	3	485	34	37
18:00	2	1	22	121	132	38	4	0	0	0	0	0	0	0	320	34	38
19:00	2	3	10	121	115	25	1	0	1	0	0	0	0	1	279	34	37
20:00	1	1	13	73	93	20	1	0	0	0	0	0	0	0	202	34	37
21:00	0	3	6	54	72	18	1	0	0	0	0	0	0	0	154	34	38
22:00	0	2	1	25	49	13	1	0	0	0	0	0	0	0	91	35	38
23:00	0	1	0	16	36	12	1	0	0	0	0	0	0	0	66	36	39
Total	148	125	407	1842	2051	576	49	4	5	1	3	1	0	21	5233		
Percent	2.8%	2.4%	7.8%	35.2%	39.2%	11.0%	0.9%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.4%			
AM Peak	08:00	08:00	08:00	08:00	11:00	10:00	11:00	11:00	07:00	10:00	09:00	11:00		11:00	08:00		
Vol.	33	25	60	124	108	41	7	1	1	1	1	1		3	323		
PM Peak	16:00	15:00	14:00	14:00	17:00	12:00	13:00	12:00	17:00		17:00			16:00	15:00		
Vol.	37	32	57	195	208	62	7	1	2		1			5	506		



Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDataLLC.com or 413.668.5094

Location: Strong Street
Location: @ Fort River Elementary
City, State: Amherst, Massachusetts
Client: PARE Corporation

Southbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
04/13/22	0	0	3	13	22	6	1	0	0	0	0	0	0	0	45	35	38
01:00	0	0	1	4	3	4	0	0	0	0	0	0	0	0	12	37	39
02:00	0	0	0	3	5	0	1	0	0	0	0	0	0	0	9	34	42
03:00	0	0	1	5	5	0	0	0	0	0	0	0	0	0	11	33	34
04:00	0	0	3	2	5	6	0	0	0	0	0	0	0	0	16	38	39
05:00	0	0	1	9	19	5	0	0	0	0	0	0	0	0	34	34	38
06:00	0	0	2	17	70	25	4	0	0	0	0	0	0	0	118	37	39
07:00	10	2	14	62	101	53	4	0	0	0	1	0	0	4	251	36	39
08:00	13	6	19	147	153	26	1	0	0	0	0	0	0	1	366	34	36
09:00	4	1	13	92	98	34	3	1	1	0	0	0	0	2	249	35	38
10:00	1	1	19	90	114	32	4	0	0	1	0	0	0	1	263	34	38
11:00	2	0	32	78	121	32	2	0	0	0	0	0	0	1	268	34	38
12 PM	2	0	12	91	142	58	7	1	0	0	0	0	0	1	314	36	39
13:00	6	0	25	114	171	45	2	1	0	0	0	0	0	0	364	34	38
14:00	11	11	70	148	142	40	3	0	1	1	0	0	0	2	429	34	37
15:00	18	27	66	231	178	23	1	1	0	0	1	0	0	3	549	33	34
16:00	8	7	56	195	210	40	7	2	0	0	0	0	0	3	528	34	37
17:00	13	31	67	248	151	24	3	0	0	0	0	0	0	2	539	33	35
18:00	7	2	22	124	123	35	0	0	0	0	0	0	0	0	313	34	37
19:00	1	2	8	79	129	27	6	0	0	0	0	0	0	0	252	34	38
20:00	0	11	8	71	90	21	0	0	0	0	0	0	1	0	202	34	37
21:00	0	5	7	62	72	10	1	0	0	0	1	0	0	0	158	34	37
22:00	0	1	4	37	56	15	1	0	0	0	0	0	0	0	114	34	38
23:00	0	0	3	15	31	8	2	0	0	0	0	0	0	0	59	35	39
Total	96	107	456	1937	2211	569	53	6	2	2	3	0	1	20	5463		
Percent	1.8%	2.0%	8.3%	35.5%	40.5%	10.4%	1.0%	0.1%	0.0%	0.0%	0.1%	0.0%	0.0%	0.4%			
AM Peak	08:00	08:00	11:00	08:00	08:00	07:00	06:00	09:00	09:00	10:00	07:00			07:00	08:00		
Vol.	13	6	32	147	153	53	4	1	1	1	1			4	366		
PM Peak	15:00	17:00	14:00	17:00	16:00	12:00	12:00	16:00	14:00	14:00	15:00		20:00	15:00	15:00		
Vol.	18	31	70	248	210	58	7	2	1	1	1		1	3	549		
Grand Total	244	232	863	3779	4262	1145	102	10	7	3	6	1	1	41	10696		
Percent	2.3%	2.2%	8.1%	35.3%	39.8%	10.7%	1.0%	0.1%	0.1%	0.0%	0.1%	0.0%	0.0%	0.4%			

15th Percentile : 25 MPH
50th Percentile : 30 MPH
85th Percentile : 34 MPH
95th Percentile : 38 MPH

Statistics
10 MPH Pace Speed : 26-35 MPH
Number in Pace : 8041
Percent in Pace : 75.2%
Number of Vehicles > 40 MPH : 171
Percent of Vehicles > 40 MPH : 1.6%
Mean Speed(Average) : 30 MPH



Location: Strong Street
 Location: @ Fort River Elementary
 City, State: Amherst, Massachusetts
 Client: PARE Corporation

Innovative Data, LLC

P.O. Pox 468
 Belchertown, Massachusetts
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Northbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
04/12/22	0	0	0	6	14	3	0	0	0	0	0	0	0	0	23	34	38
01:00	0	0	0	5	2	0	0	0	0	0	0	0	0	0	7	32	34
02:00	0	0	1	2	2	3	0	0	0	0	0	0	0	0	8	38	39
03:00	0	0	1	3	0	3	0	0	0	0	0	0	0	0	7	38	39
04:00	0	0	0	8	17	5	4	0	0	0	0	0	0	0	34	38	42
05:00	0	1	4	19	56	23	3	0	0	0	0	0	0	0	106	37	39
06:00	0	0	10	69	113	58	7	1	0	1	0	0	0	0	259	37	39
07:00	11	23	64	138	128	36	4	0	0	0	0	0	0	0	404	34	37
08:00	156	93	74	73	19	3	0	0	0	0	0	0	0	0	418	27	30
09:00	19	36	104	162	108	25	0	1	0	0	0	0	0	0	455	33	35
10:00	1	16	14	80	151	67	8	1	0	0	0	0	0	0	338	36	39
11:00	1	11	38	122	121	39	8	0	0	0	0	0	0	0	340	34	38
12 PM	5	7	42	149	151	37	3	0	0	0	0	0	0	0	394	34	37
13:00	1	14	67	120	140	49	5	0	1	0	0	0	0	0	397	34	38
14:00	26	24	70	127	101	21	3	1	0	0	0	0	0	0	373	33	36
15:00	1	15	49	151	99	27	2	0	0	0	0	0	0	0	344	33	37
16:00	33	29	53	102	105	21	3	1	0	0	0	0	0	0	347	33	36
17:00	7	19	59	144	111	38	5	0	0	0	0	0	0	0	383	34	38
18:00	2	8	55	124	106	40	3	0	0	0	0	0	0	0	338	34	38
19:00	1	1	13	77	97	33	5	1	0	1	0	0	0	0	229	35	39
20:00	0	5	9	68	81	9	6	0	0	0	0	0	0	0	178	34	38
21:00	0	1	12	37	50	25	1	0	0	0	0	0	0	0	126	36	38
22:00	0	1	5	31	39	6	0	0	0	0	0	0	0	0	82	34	36
23:00	0	0	6	10	26	8	1	1	0	0	0	0	0	0	52	36	39
Total	264	304	750	1827	1837	579	71	7	1	2	0	0	0	0	5642		
Percent	4.7%	5.4%	13.3%	32.4%	32.6%	10.3%	1.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	09:00	09:00	10:00	10:00	10:00	06:00		06:00					09:00		
Vol.	156	93	104	162	151	67	8	1		1					455		
PM Peak	16:00	16:00	14:00	15:00	12:00	13:00	20:00	14:00	13:00	19:00					13:00		
Vol.	33	29	70	151	151	49	6	1	1	1					397		



Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDataIc.com or 413.668.5094

Location: Strong Street
Location: @ Fort River Elementary
City, State: Amherst, Massachusetts
Client: PARE Corporation

Northbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
	15	20	25	30	35	40	45	50	55	60	65	70	75	999			
04/13/22	0	0	0	5	11	7	1	0	1	0	0	0	0	0	25	38	43
01:00	0	0	1	9	6	4	1	0	0	0	0	0	0	0	21	37	39
02:00	0	1	0	5	4	1	0	0	0	0	0	0	0	0	11	34	37
03:00	0	0	1	3	4	3	0	0	0	0	0	0	0	0	11	37	39
04:00	0	0	1	9	13	12	1	2	0	0	0	0	0	0	38	38	45
05:00	0	1	6	18	23	29	7	1	0	0	0	0	0	0	85	39	42
06:00	0	2	6	70	110	60	14	2	0	0	0	0	0	0	264	38	40
07:00	5	19	32	102	123	62	8	2	0	0	0	0	0	0	353	36	39
08:00	101	78	67	110	79	20	1	0	0	0	0	0	0	0	456	32	34
09:00	4	23	94	136	99	37	2	0	0	0	0	0	0	0	395	33	37
10:00	13	10	57	118	124	33	6	1	0	0	0	0	0	0	362	34	38
11:00	11	7	54	149	117	34	1	0	0	0	0	0	0	0	373	34	37
12 PM	4	8	49	130	137	51	7	0	0	0	0	0	0	0	386	35	38
13:00	5	11	36	106	145	46	3	0	1	0	0	0	0	0	353	34	38
14:00	6	12	44	120	113	38	5	0	0	0	0	0	0	0	338	34	38
15:00	34	39	86	142	103	21	1	0	0	0	0	0	0	0	426	32	35
16:00	27	46	92	110	111	22	4	0	0	0	0	0	0	0	412	33	36
17:00	15	14	52	162	138	31	2	0	0	0	0	0	0	0	414	33	36
18:00	7	9	31	104	133	32	4	0	0	0	0	0	0	0	320	34	38
19:00	0	5	31	122	105	27	2	0	0	0	0	0	0	0	292	34	37
20:00	1	0	19	60	60	12	2	0	0	0	0	0	0	0	154	34	37
21:00	0	1	13	60	46	12	2	0	0	0	0	0	0	0	134	34	38
22:00	0	1	5	37	48	17	0	0	0	0	0	0	0	0	108	35	38
23:00	0	0	4	20	22	7	2	1	0	0	0	0	0	0	56	36	40
Total	233	287	781	1907	1874	618	76	9	2	0	0	0	0	0	5787		
Percent	4.0%	5.0%	13.5%	33.0%	32.4%	10.7%	1.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			
AM Peak	08:00	08:00	09:00	11:00	10:00	07:00	06:00	04:00	00:00						08:00		
Vol.	101	78	94	149	124	62	14	2	1						456		
PM Peak	15:00	16:00	16:00	17:00	13:00	12:00	12:00	23:00	13:00						15:00		
Vol.	34	46	92	162	145	51	7	1	1						426		
Grand Total	497	591	1531	3734	3711	1197	147	16	3	2	0	0	0	0	11429		
Percent	4.3%	5.2%	13.4%	32.7%	32.5%	10.5%	1.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%			

15th Percentile : 22 MPH
50th Percentile : 29 MPH
85th Percentile : 34 MPH
95th Percentile : 38 MPH

Statistics
10 MPH Pace Speed : 26-35 MPH
Number in Pace : 7445
Percent in Pace : 65.1%
Number of Vehicles > 40 MPH : 168
Percent of Vehicles > 40 MPH : 1.5%
Mean Speed(Average) : 29 MPH



Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDataIc.com or 413.668.5094

Location: Strong Street
Location: @ Fort River Elementary
City, State: Amherst, Massachusetts
Client: PARE Corporation

Southbound, Northbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
04/12/22	0	0	1	11	31	8	3	0	0	0	0	0	0	0	54	36	40
01:00	0	0	1	8	7	4	0	0	0	0	0	0	0	0	20	36	38
02:00	0	0	1	5	2	5	0	0	0	0	0	0	0	0	13	38	39
03:00	1	0	3	4	3	5	0	0	0	0	0	0	0	0	16	37	39
04:00	0	0	1	10	20	10	4	0	0	0	0	0	0	0	45	38	42
05:00	0	2	4	31	75	31	3	0	0	0	0	0	0	0	146	36	39
06:00	0	0	12	88	166	81	9	1	0	1	0	0	0	0	358	37	39
07:00	13	24	84	249	228	74	4	0	1	0	0	0	0	1	678	34	38
08:00	189	118	134	197	85	16	0	0	0	0	0	0	0	2	741	29	33
09:00	22	42	135	255	208	45	1	1	0	0	1	0	0	0	710	33	36
10:00	1	19	24	149	257	108	12	1	0	1	0	0	0	0	572	36	39
11:00	4	18	50	229	229	73	15	1	0	0	1	1	0	3	624	34	39
12 PM	14	9	51	212	305	99	5	1	0	0	0	0	0	0	696	35	38
13:00	3	14	93	230	283	103	12	0	1	0	0	0	0	1	740	35	38
14:00	35	31	127	322	259	63	4	2	0	0	0	0	0	2	845	33	37
15:00	32	47	95	327	272	65	8	0	1	0	0	0	0	3	850	34	37
16:00	70	48	98	258	243	53	5	2	0	0	0	0	0	5	782	33	36
17:00	20	30	91	327	319	65	10	0	2	0	1	0	0	3	868	34	37
18:00	4	9	77	245	238	78	7	0	0	0	0	0	0	0	658	34	38
19:00	3	4	23	198	212	58	6	1	1	1	0	0	0	1	508	34	38
20:00	1	6	22	141	174	29	7	0	0	0	0	0	0	0	380	34	37
21:00	0	4	18	91	122	43	2	0	0	0	0	0	0	0	280	35	38
22:00	0	3	6	56	88	19	1	0	0	0	0	0	0	0	173	34	37
23:00	0	1	6	26	62	20	2	1	0	0	0	0	0	0	118	36	39
Total	412	429	1157	3669	3888	1155	120	11	6	3	3	1	0	21	10875		
Percent	3.8%	3.9%	10.6%	33.7%	35.8%	10.6%	1.1%	0.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.2%			
AM Peak	08:00	08:00	09:00	09:00	10:00	10:00	11:00	06:00	07:00	06:00	09:00	11:00		11:00	08:00		
Vol.	189	118	135	255	257	108	15	1	1	1	1	1		3	741		
PM Peak	16:00	16:00	14:00	15:00	17:00	13:00	13:00	14:00	17:00	19:00	17:00			16:00	17:00		
Vol.	70	48	127	327	319	103	12	2	2	1	1			5	868		



Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDataLLC.com or 413.668.5094

Location: Strong Street
Location: @ Fort River Elementary
City, State: Amherst, Massachusetts
Client: PARE Corporation

Southbound, Northbound

Start Time	1	16	21	26	31	36	41	46	51	56	61	66	71	76	Total	85th Percent	95th Percent
04/13/22	0	0	3	18	33	13	2	0	1	0	0	0	0	0	70	37	39
01:00	0	0	2	13	9	8	1	0	0	0	0	0	0	0	33	37	39
02:00	0	1	0	8	9	1	1	0	0	0	0	0	0	0	20	34	40
03:00	0	0	2	8	9	3	0	0	0	0	0	0	0	0	22	34	38
04:00	0	0	4	11	18	18	1	2	0	0	0	0	0	0	54	38	41
05:00	0	1	7	27	42	34	7	1	0	0	0	0	0	0	119	38	41
06:00	0	2	8	87	180	85	18	2	0	0	0	0	0	0	382	37	40
07:00	15	21	46	164	224	115	12	2	0	0	1	0	0	4	604	36	39
08:00	114	84	86	257	232	46	2	0	0	0	0	0	0	1	822	33	35
09:00	8	24	107	228	197	71	5	1	1	0	0	0	0	2	644	34	38
10:00	14	11	76	208	238	65	10	1	0	1	0	0	0	1	625	34	38
11:00	13	7	86	227	238	66	3	0	0	0	0	0	0	1	641	34	37
12 PM	6	8	61	221	279	109	14	1	0	0	0	0	0	1	700	35	39
13:00	11	11	61	220	316	91	5	1	1	0	0	0	0	0	717	34	38
14:00	17	23	114	268	255	78	8	0	1	1	0	0	0	2	767	34	38
15:00	52	66	152	373	281	44	2	1	0	0	1	0	0	3	975	33	34
16:00	35	53	148	305	321	62	11	2	0	0	0	0	0	3	940	33	37
17:00	28	45	119	410	289	55	5	0	0	0	0	0	0	2	953	33	36
18:00	14	11	53	228	256	67	4	0	0	0	0	0	0	0	633	34	37
19:00	1	7	39	201	234	54	8	0	0	0	0	0	0	0	544	34	38
20:00	1	11	27	131	150	33	2	0	0	0	0	0	1	0	356	34	37
21:00	0	6	20	122	118	22	3	0	0	0	1	0	0	0	292	34	37
22:00	0	2	9	74	104	32	1	0	0	0	0	0	0	0	222	34	38
23:00	0	0	7	35	53	15	4	1	0	0	0	0	0	0	115	35	39
Total	329	394	1237	3844	4085	1187	129	15	4	2	3	0	1	20	11250		
Percent	2.9%	3.5%	11.0%	34.2%	36.3%	10.6%	1.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%			
AM Peak	08:00	08:00	09:00	08:00	10:00	07:00	06:00	04:00	00:00	10:00	07:00			07:00	08:00		
Vol.	114	84	107	257	238	115	18	2	1	1	1			4	822		
PM Peak	15:00	15:00	15:00	17:00	16:00	12:00	12:00	16:00	13:00	14:00	15:00		20:00	15:00	15:00		
Vol.	52	66	152	410	321	109	14	2	1	1	1		1	3	975		
Grand Total	741	823	2394	7513	7973	2342	249	26	10	5	6	1	1	41	22125		
Percent	3.3%	3.7%	10.8%	34.0%	36.0%	10.6%	1.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.2%			

15th Percentile : 23 MPH
50th Percentile : 29 MPH
85th Percentile : 34 MPH
95th Percentile : 38 MPH

Statistics
10 MPH Pace Speed : 26-35 MPH
Number in Pace : 15486
Percent in Pace : 70.0%
Number of Vehicles > 40 MPH : 339
Percent of Vehicles > 40 MPH : 1.5%
Mean Speed(Average) : 30 MPH



Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDataIc.com or 413.668.5094

Location: Strong Street
 Location: @ Fort River Elementary
 City, State: Amherst, Massachusetts
 Client: PARE Corporation

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/12/22	0	27	4	0	0	0	0	0	0	0	0	0	0	0	31
01:00	0	11	2	0	0	0	0	0	0	0	0	0	0	0	13
02:00	0	4	1	0	0	0	0	0	0	0	0	0	0	0	5
03:00	0	7	1	0	0	0	0	0	0	0	0	0	0	1	9
04:00	0	10	1	0	0	0	0	0	0	0	0	0	0	0	11
05:00	1	20	11	0	6	0	0	1	0	1	0	0	0	0	40
06:00	0	69	17	0	7	1	2	1	1	1	0	0	0	0	99
07:00	2	212	37	4	12	0	0	5	1	0	0	0	1	0	274
08:00	16	238	46	7	13	2	1	0	0	0	0	0	0	0	323
09:00	6	199	31	3	11	1	0	1	0	2	0	0	0	1	255
10:00	2	169	45	4	12	0	0	1	0	0	0	0	0	1	234
11:00	5	217	39	5	11	6	0	1	0	0	0	0	0	0	284
12 PM	2	226	46	4	15	0	1	6	1	1	0	0	0	0	302
13:00	5	266	53	3	15	1	0	0	0	0	0	0	0	0	343
14:00	6	372	64	11	13	3	0	0	0	1	0	0	0	2	472
15:00	6	389	74	9	18	5	0	0	1	0	0	0	0	4	506
16:00	5	356	50	3	15	3	0	1	0	0	0	0	0	2	435
17:00	7	403	49	7	17	1	0	1	0	0	0	0	0	0	485
18:00	4	262	40	4	8	2	0	0	0	0	0	0	0	0	320
19:00	3	239	25	3	6	1	0	1	1	0	0	0	0	0	279
20:00	0	172	21	2	7	0	0	0	0	0	0	0	0	0	202
21:00	1	138	10	2	3	0	0	0	0	0	0	0	0	0	154
22:00	0	79	10	2	0	0	0	0	0	0	0	0	0	0	91
23:00	0	57	5	2	2	0	0	0	0	0	0	0	0	0	66
Total	71	4142	682	75	191	26	4	19	5	6	0	0	1	11	5233
Percent	1.4%	79.2%	13.0%	1.4%	3.6%	0.5%	0.1%	0.4%	0.1%	0.1%	0.0%	0.0%	0.0%	0.2%	
AM Peak	08:00	08:00	08:00	08:00	08:00	11:00	06:00	07:00	06:00	09:00			07:00	03:00	
Vol.	16	238	46	7	13	6	2	5	1	2			1	1	
PM Peak	17:00	17:00	15:00	14:00	15:00	15:00	12:00	12:00	12:00	12:00				15:00	
Vol.	7	403	74	11	18	5	1	6	1	1				4	



Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDataIc.com or 413.668.5094

Location: Strong Street
Location: @ Fort River Elementary
City, State: Amherst, Massachusetts
Client: PARE Corporation

Southbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/13/22	0	40	5	0	0	0	0	0	0	0	0	0	0	0	45
01:00	0	12	0	0	0	0	0	0	0	0	0	0	0	0	12
02:00	0	9	0	0	0	0	0	0	0	0	0	0	0	0	9
03:00	0	8	1	0	2	0	0	0	0	0	0	0	0	0	11
04:00	0	9	5	0	2	0	0	0	0	0	0	0	0	0	16
05:00	0	19	9	0	5	1	0	0	0	0	0	0	0	0	34
06:00	0	91	16	0	8	3	0	0	0	0	0	0	0	0	118
07:00	5	177	42	4	14	1	1	4	1	0	0	0	0	2	251
08:00	2	276	59	9	16	2	0	1	0	0	0	0	0	1	366
09:00	8	189	31	3	16	1	1	0	0	0	0	0	0	0	249
10:00	3	200	35	5	15	2	0	1	2	0	0	0	0	0	263
11:00	1	205	34	6	15	3	1	2	1	0	0	0	0	0	268
12 PM	3	242	37	3	25	2	0	0	0	0	0	0	1	1	314
13:00	6	273	56	7	17	1	1	1	1	0	0	0	0	1	364
14:00	9	319	63	12	21	1	0	1	0	0	0	0	0	3	429
15:00	8	422	75	10	23	3	1	4	1	0	0	0	0	2	549
16:00	6	436	55	3	21	0	0	2	0	0	0	0	0	5	528
17:00	7	454	50	5	14	3	1	2	1	0	0	0	0	2	539
18:00	9	262	34	3	4	0	0	0	0	0	0	0	0	1	313
19:00	6	210	26	3	7	0	0	0	0	0	0	0	0	0	252
20:00	1	178	17	2	2	0	0	0	1	0	0	0	0	1	202
21:00	0	142	11	2	3	0	0	0	0	0	0	0	0	0	158
22:00	0	106	6	2	0	0	0	0	0	0	0	0	0	0	114
23:00	1	50	5	2	1	0	0	0	0	0	0	0	0	0	59
Total	75	4329	672	81	231	23	6	18	8	0	0	0	1	19	5463
Percent	1.4%	79.2%	12.3%	1.5%	4.2%	0.4%	0.1%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.3%	
AM Peak	09:00	08:00	08:00	08:00	08:00	06:00	07:00	07:00	10:00					07:00	
Vol.	8	276	59	9	16	3	1	4	2					2	
PM Peak	14:00	17:00	15:00	14:00	12:00	15:00	13:00	15:00	13:00				12:00	16:00	
Vol.	9	454	75	12	25	3	1	4	1				1	5	
Grand Total	146	8471	1354	156	422	49	10	37	13	6	0	0	2	30	10696
Percent	1.4%	79.2%	12.7%	1.5%	3.9%	0.5%	0.1%	0.3%	0.1%	0.1%	0.0%	0.0%	0.0%	0.3%	



Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDataIc.com or 413.668.5094

Location: Strong Street
Location: @ Fort River Elementary
City, State: Amherst, Massachusetts
Client: PARE Corporation

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/12/22	0	22	0	1	0	0	0	0	0	0	0	0	0	0	23
01:00	0	5	2	0	0	0	0	0	0	0	0	0	0	0	7
02:00	0	7	1	0	0	0	0	0	0	0	0	0	0	0	8
03:00	0	5	2	0	0	0	0	0	0	0	0	0	0	0	7
04:00	0	21	10	0	3	0	0	0	0	0	0	0	0	0	34
05:00	0	66	21	0	18	1	0	0	0	0	0	0	0	0	106
06:00	0	163	47	1	46	1	0	1	0	0	0	0	0	0	259
07:00	4	328	38	3	25	3	1	1	1	0	0	0	0	0	404
08:00	15	324	44	7	9	8	3	1	1	1	0	0	0	5	418
09:00	2	355	53	6	26	7	2	3	0	0	0	0	0	1	455
10:00	0	237	64	3	27	3	0	3	0	1	0	0	0	0	338
11:00	3	254	51	6	19	3	2	1	1	0	0	0	0	0	340
12 PM	4	314	42	3	25	6	0	0	0	0	0	0	0	0	394
13:00	4	289	69	3	22	6	0	3	0	0	0	0	0	1	397
14:00	1	295	47	4	18	5	1	0	0	0	1	0	0	1	373
15:00	4	271	45	6	10	6	0	1	0	0	0	0	0	1	344
16:00	7	278	37	3	17	2	0	0	0	0	0	0	0	3	347
17:00	2	321	36	3	19	1	1	0	0	0	0	0	0	0	383
18:00	6	281	34	3	13	0	0	0	0	1	0	0	0	0	338
19:00	1	203	17	2	6	0	0	0	0	0	0	0	0	0	229
20:00	0	149	22	2	4	1	0	0	0	0	0	0	0	0	178
21:00	0	115	9	2	0	0	0	0	0	0	0	0	0	0	126
22:00	0	66	11	3	2	0	0	0	0	0	0	0	0	0	82
23:00	0	44	4	3	1	0	0	0	0	0	0	0	0	0	52
Total	53	4413	706	64	310	53	10	14	3	3	1	0	0	12	5642
Percent	0.9%	78.2%	12.5%	1.1%	5.5%	0.9%	0.2%	0.2%	0.1%	0.1%	0.0%	0.0%	0.0%	0.2%	
AM Peak	08:00	09:00	10:00	08:00	06:00	08:00	08:00	09:00	07:00	08:00				08:00	
Vol.	15	355	64	7	46	8	3	3	1	1				5	
PM Peak	16:00	17:00	13:00	15:00	12:00	12:00	14:00	13:00		18:00	14:00			16:00	
Vol.	7	321	69	6	25	6	1	3		1	1			3	



Innovative Data, LLC

P.O. Pox 468

Belchertown, Massachusetts

InnovativeDataIc.com or 413.668.5094

Location: Strong Street
 Location: @ Fort River Elementary
 City, State: Amherst, Massachusetts
 Client: PARE Corporation

Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/13/22	0	20	3	0	2	0	0	0	0	0	0	0	0	0	25
01:00	0	15	4	0	1	1	0	0	0	0	0	0	0	0	21
02:00	0	9	1	0	1	0	0	0	0	0	0	0	0	0	11
03:00	0	7	3	0	1	0	0	0	0	0	0	0	0	0	11
04:00	0	15	16	0	7	0	0	0	0	0	0	0	0	0	38
05:00	0	51	15	0	18	1	0	0	0	0	0	0	0	0	85
06:00	0	149	60	2	50	2	0	1	0	0	0	0	0	0	264
07:00	5	272	43	4	25	1	0	3	0	0	0	0	0	0	353
08:00	2	362	56	4	23	4	1	2	0	0	0	0	0	2	456
09:00	3	307	50	5	25	1	1	2	1	0	0	0	0	0	395
10:00	8	276	42	3	31	1	0	1	0	0	0	0	0	0	362
11:00	0	302	39	5	23	1	1	1	1	0	0	0	0	0	373
12 PM	7	300	44	9	23	1	0	0	1	1	0	0	0	0	386
13:00	6	279	32	4	28	1	2	1	0	0	0	0	0	0	353
14:00	5	260	45	4	17	6	0	0	1	0	0	0	0	0	338
15:00	4	342	55	4	15	3	0	1	1	0	0	0	0	1	426
16:00	9	323	44	5	22	4	0	2	0	1	0	0	0	2	412
17:00	7	346	45	2	12	1	0	1	0	0	0	0	0	0	414
18:00	4	280	27	3	4	1	0	1	0	0	0	0	0	0	320
19:00	1	249	32	3	5	1	0	1	0	0	0	0	0	0	292
20:00	0	132	17	2	3	0	0	0	0	0	0	0	0	0	154
21:00	0	120	8	2	4	0	0	0	0	0	0	0	0	0	134
22:00	0	96	8	2	2	0	0	0	0	0	0	0	0	0	108
23:00	1	49	4	2	0	0	0	0	0	0	0	0	0	0	56
Total	62	4561	693	65	342	30	5	17	5	2	0	0	0	5	5787
Percent	1.1%	78.8%	12.0%	1.1%	5.9%	0.5%	0.1%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	
AM Peak	10:00	08:00	06:00	09:00	06:00	08:00	08:00	07:00	09:00					08:00	
Vol.	8	362	60	5	50	4	1	3	1					2	
PM Peak	16:00	17:00	15:00	12:00	13:00	14:00	13:00	16:00	12:00	12:00				16:00	
Vol.	9	346	55	9	28	6	2	2	1	1				2	
Grand Total	115	8974	1399	129	652	83	15	31	8	5	1	0	0	17	11429
Percent	1.0%	78.5%	12.2%	1.1%	5.7%	0.7%	0.1%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.1%	



Location: Strong Street
 Location: @ Fort River Elementary
 City, State: Amherst, Massachusetts
 Client: PARE Corporation

Innovative Data, LLC

P.O. Pox 468
 Belchertown, Massachusetts
 InnovativeDataIc.com or 413.668.5094

Southbound, Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/12/22	0	49	4	1	0	0	0	0	0	0	0	0	0	0	54
01:00	0	16	4	0	0	0	0	0	0	0	0	0	0	0	20
02:00	0	11	2	0	0	0	0	0	0	0	0	0	0	0	13
03:00	0	12	3	0	0	0	0	0	0	0	0	0	0	1	16
04:00	0	31	11	0	3	0	0	0	0	0	0	0	0	0	45
05:00	1	86	32	0	24	1	0	1	0	1	0	0	0	0	146
06:00	0	232	64	1	53	2	2	2	1	1	0	0	0	0	358
07:00	6	540	75	7	37	3	1	6	2	0	0	0	1	0	678
08:00	31	562	90	14	22	10	4	1	1	1	0	0	0	5	741
09:00	8	554	84	9	37	8	2	4	0	2	0	0	0	2	710
10:00	2	406	109	7	39	3	0	4	0	1	0	0	0	1	572
11:00	8	471	90	11	30	9	2	2	1	0	0	0	0	0	624
12 PM	6	540	88	7	40	6	1	6	1	1	0	0	0	0	696
13:00	9	555	122	6	37	7	0	3	0	0	0	0	0	1	740
14:00	7	667	111	15	31	8	1	0	0	1	1	0	0	3	845
15:00	10	660	119	15	28	11	0	1	1	0	0	0	0	5	850
16:00	12	634	87	6	32	5	0	1	0	0	0	0	0	5	782
17:00	9	724	85	10	36	2	1	1	0	0	0	0	0	0	868
18:00	10	543	74	7	21	2	0	0	0	1	0	0	0	0	658
19:00	4	442	42	5	12	1	0	1	1	0	0	0	0	0	508
20:00	0	321	43	4	11	1	0	0	0	0	0	0	0	0	380
21:00	1	253	19	4	3	0	0	0	0	0	0	0	0	0	280
22:00	0	145	21	5	2	0	0	0	0	0	0	0	0	0	173
23:00	0	101	9	5	3	0	0	0	0	0	0	0	0	0	118
Total	124	8555	1388	139	501	79	14	33	8	9	1	0	1	23	10875
Percent	1.1%	78.7%	12.8%	1.3%	4.6%	0.7%	0.1%	0.3%	0.1%	0.1%	0.0%	0.0%	0.0%	0.2%	
AM Peak	08:00	08:00	10:00	08:00	06:00	08:00	08:00	07:00	07:00	09:00			07:00	08:00	
Vol.	31	562	109	14	53	10	4	6	2	2			1	5	
PM Peak	16:00	17:00	13:00	14:00	12:00	15:00	12:00	12:00	12:00	12:00	14:00			15:00	
Vol.	12	724	122	15	40	11	1	6	1	1	1			5	



Location: Strong Street
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Southbound, Northbound

Start Time	Bikes	Cars & Trailers	2 Axle Long	Buses	2 Axle 6 Tire	3 Axle Single	4 Axle Single	<5 Axl Double	5 Axle Double	>6 Axl Double	<6 Axl Multi	6 Axle Multi	>6 Axl Multi	Not Classed	Total
04/13/22	0	60	8	0	2	0	0	0	0	0	0	0	0	0	70
01:00	0	27	4	0	1	1	0	0	0	0	0	0	0	0	33
02:00	0	18	1	0	1	0	0	0	0	0	0	0	0	0	20
03:00	0	15	4	0	3	0	0	0	0	0	0	0	0	0	22
04:00	0	24	21	0	9	0	0	0	0	0	0	0	0	0	54
05:00	0	70	24	0	23	2	0	0	0	0	0	0	0	0	119
06:00	0	240	76	2	58	5	0	1	0	0	0	0	0	0	382
07:00	10	449	85	8	39	2	1	7	1	0	0	0	0	2	604
08:00	4	638	115	13	39	6	1	3	0	0	0	0	0	3	822
09:00	11	496	81	8	41	2	2	2	1	0	0	0	0	0	644
10:00	11	476	77	8	46	3	0	2	2	0	0	0	0	0	625
11:00	1	507	73	11	38	4	2	3	2	0	0	0	0	0	641
12 PM	10	542	81	12	48	3	0	0	1	1	0	0	1	1	700
13:00	12	552	88	11	45	2	3	2	1	0	0	0	0	1	717
14:00	14	579	108	16	38	7	0	1	1	0	0	0	0	3	767
15:00	12	764	130	14	38	6	1	5	2	0	0	0	0	3	975
16:00	15	759	99	8	43	4	0	4	0	1	0	0	0	7	940
17:00	14	800	95	7	26	4	1	3	1	0	0	0	0	2	953
18:00	13	542	61	6	8	1	0	1	0	0	0	0	0	1	633
19:00	7	459	58	6	12	1	0	1	0	0	0	0	0	0	544
20:00	1	310	34	4	5	0	0	0	1	0	0	0	0	1	356
21:00	0	262	19	4	7	0	0	0	0	0	0	0	0	0	292
22:00	0	202	14	4	2	0	0	0	0	0	0	0	0	0	222
23:00	2	99	9	4	1	0	0	0	0	0	0	0	0	0	115
Total	137	8890	1365	146	573	53	11	35	13	2	0	0	1	24	11250
Percent	1.2%	79.0%	12.1%	1.3%	5.1%	0.5%	0.1%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.2%	
AM Peak	09:00	08:00	08:00	08:00	06:00	08:00	09:00	07:00	10:00					08:00	
Vol.	11	638	115	13	58	6	2	7	2					3	
PM Peak	16:00	17:00	15:00	14:00	12:00	14:00	13:00	15:00	15:00	12:00			12:00	16:00	
Vol.	15	800	130	16	48	7	3	5	2	1			1	7	
Grand Total	261	17445	2753	285	1074	132	25	68	21	11	1	0	2	47	22125
Percent	1.2%	78.8%	12.4%	1.3%	4.9%	0.6%	0.1%	0.3%	0.1%	0.0%	0.0%	0.0%	0.0%	0.2%	

Appendix D

Census Data



Fort River Elementary School
Amherst, MA
Existing and Proposed Traffic Volumes
PARE Project No. 21245.00
January 19, 2022



US Census Data
City of Amherst

	Population
2020	39,263
2010	37819
Years	10

ANNUAL GROWTH RATE	0.38%
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SAY	0.50%
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Appendix E

Traffic Volumes, School Enrollment and Amherst School District Map



2022-2029
TRAFFIC VOLUME SUMMARY
Future No-Build Growth Factor = 0.5%
End of School Hour (2:15 - 3:00)

Weekday AM Peak Hour

Weekday PM Peak Hour

East Pleasant Street at Clark Hill Road							
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1	2029 Build 2
NB - L	74		77			77	77
NB - T	265		275	57	11	332	286
SB - T	380		394	11	38	405	432
SB - R	19		20			20	20
EB - L	5		6			6	6
EB - R	21		22			22	22

East Pleasant Street at Strong Street							
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1	2029 Build 2
NB - T	155		161		2	161	163
NB - R	57		60	82		142	60
SB - L	92		96	11	38	107	134
SB - T	311		323			323	323
WB - L	59		62	57		119	62
WB - R	163		190	19	9	209	199

East Pleasant Street at Triangle Street							
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1	2029 Build 2
NB - L	149		155			155	155
NB - T	165		171	63		234	171
NB - R	24		25			25	25
SB - L	42		44	3	4	47	48
SB - T	178		185	13	16	198	201
SB - R	46		48	3		51	48
EB - L	36		38			38	38
EB - T	117		122			122	122
EB - R	119		124			124	124
WB - L	52		54		2	54	56
WB - T	282		303		10	303	313
WB - R	52		54	19	2	73	56

Strong Street at Wildwood School							
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1	2029 Build 2
NB - L	77		80			156	80
NB - R	22		23	22		45	23
EB - T	44		46			46	46
EB - R	126		131	93		224	131
WB - L	52		54			54	54
WB - T	143		149	20	9	169	158

Strong Street at Hills Road							
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1	2029 Build 2
NB - L	9		10			10	10
NB - R	0		0			0	0
EB - T	55		57	22	40	79	97
EB - R	17		18			18	18
WB - L	1		2			2	2
WB - T	200		208	20	9	228	217

Strong Street at Red Gate Lane							
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1	2029 Build 2
NB - L	9		10			10	10
NB - R	7		8			8	8
EB - T	51		53	22	40	75	93
EB - R	4		5			5	5
WB - L	12		13			13	13
WB - T	185		192	20	9	212	201

North East Street and Strong Street							
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1	2029 Build 2
NB - L	136		141	3	9	144	150
NB - T	164		170	10		170	180
SB - T	160		166		42	166	208
SB - R	16		17	17		34	17
EB - L	9		10	4		14	10
EB - R	49		51	18	42	69	93

Main Street, Triangle Street and Dickinson Street							
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1	2029 Build 2
NB - L	6		7			7	7
NB - T	60		63			63	63
NB - R	9		10			10	10
SB - L	94		98	3	25	101	123
SB - T	13		14			14	14
SB - R	7		8			8	8
EB - L	35		37			37	37
EB - T	127		132		25	132	157
EB - R	3		4			4	4
WB - L	7		8			8	8
WB - T	215		223	12	7	235	230
WB - R	350		363	19	12	382	375

Main Street and North Whitney Street							
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1	2029 Build 2
NB - L	48		50	2		52	50
NB - T	9		10			10	10
NB - R	25		26			26	26
SB - L	4		5		9	5	14
SB - T	4		5			5	13
SB - R	9		10			10	10
EB - L	3		4			4	4
EB - T	195		202	3	50	205	252
EB - R	13		14			14	14
WB - L	26		27			27	27
WB - T	683		694	29	19	723	623
WB - R	7		8			8	8

Main Street, North East Street and South East Street							
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1	2029 Build 2
NB - L	253		262		19	262	281
NB - T	256		266		19	266	285
NB - R	53		55		5	55	60
SB - L	28		29	3		32	29
SB - T	169		176	15	84	191	260
SB - R	48		50	7		57	50
EB - L	18		19			19	19
EB - T	91		96	2		97	96
EB - R	85		89	1	30	90	119
WB - L	84		87			87	87
WB - T	284		295	19		314	295
WB - R	61		64			64	64

East Pleasant Street at Clark Hill Road							
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1	2029 Build 2
NB - L	31		33			33	33
NB - T	260		270	10	22	280	292
SB - T	315		327	34	6	361	333
SB - R	13		14			14	14
EB - L	13		14			14	14
EB - R	66		69			69	69

East Pleasant Street at Strong Street							
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1	2029 Build 2
NB - T	210		218			218	218
NB - R	58		61	15		76	61
SB - L	137		142	34	5	176	147
SB - T	247		256			256	257
WB - L	68		71	73		144	71
WB - R	85		89	10	22	99	111

East Pleasant Street at Triangle Street							
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1	2029 Build 2
NB - L	136		141			141	141
NB - T	174		181	9	6	190	187
NB - R	44		46		1	46	47
SB - L	41		43	4	1	47	44
SB - T	212		220	69		289	220
SB - R	69		72			72	72
EB - L	47		49	2		51	49
EB - T	127		133		4	133	127
EB - R	180		187			187	187
WB - L	43		45			45	45
WB - T	180		187			187	187
WB - R	86		90	4	6	94	96

Strong Street at Wildwood School							
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1	2029 Build 2
NB - L	81		84			167	84
NB - R	24		25	18		43	25
EB - T	126		131	0	5	131	136
EB - R	65		68	49		117	68
WB - L	14		15	11		26	15
WB - T	73		76	0	23	76	99

Strong Street at Hills Road							
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1	2029 Build 2
NB - L	3		4			4	4
NB - R	1		2			2	2
EB - T	137		142	18	5	160	147
EB - R	18		19			19	19
WB - L	2		3			3	3
WB - T	83		86	11	23	97	109

Strong Street at Red Gate Lane							
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1	2029 Build 2
NB - L	7		8			8	8
NB - R	6		7			7	7
EB - T	125		130	18	5	148	135
EB - R	6		7			7	7
WB - L	4		5			5	5
WB - T	77		80	11	23	91	103

North East Street and Strong Street							
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1	2029 Build 2
NB - L	61		64	9	24	73	88
NB - T	131		136		25	136	161
SB - T	156		162		6	162	168
SB - R	10		11	2		13	11
EB - L	8		9	15		24	9
EB - R	110		114	3	5	117	119

Main Street, Triangle Street and Dickinson Street							
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1	2029 Build 2
NB - L	14		15			15	15
NB - T	19		20			20	20
NB - R	12		13			13	13
SB - L	283		294		6	294	300
SB - T	25		26			26	26
SB - R	16		17			17	17
EB - L	18		19			19	19
EB - T	224		232	27	4	259	236
EB - R	9		10			10	10
WB - L	10		11			11	11
WB - T	191		198		15	198	213
WB - R	185		192	4	15	196	207

Main Street and North Whitney Street							
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1	2029 Build 2
NB - L	27		28			28	28
NB - T	9		10		5	10	15
NB - R	25		26			26	26
SB - L	7		8			8	8
SB - T	8		9			9	9
SB - R	19		20			20	20
EB - L	10		11			11	11
EB - T	466		483	26	10	509	493
EB - R	33		35	1		36	35
WB - L	22		23			23	23
WB - T	341		354	4	2	358	366
WB - R	8		9		5	9	14

2022-2029
TRAFFIC VOLUME SUMMARY
Future No-Build Growth Factor = 0.5%
End of School Hour (2:15 - 3:00)

Weekday AM Peak Hour

Weekday PM Peak Hour

South East Street and Fort River Elementary School Exit						
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1
NB - T	548		568			568
SB - T	340		353	16	84	369
WB - L	56		58		n/a	58
WB - R	52		54		42	54

South East Street and Fort River Elementary School Exit						
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1
NB - T	359		372		11	383
SB - T	435		451		24	451
WB - L	64		67		n/a	67
WB - R	46		48		84	48

South East Street and Fort River Elementary School Exit						
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1
NB - T	469		486			486
SB - T	586		607			607
WB - L	16		17		n/a	17
WB - R	14		15		15	15

South East Street, South East Street Frontage Road, and Fort River Elementary School Entrance						
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1
NB - T	545		565			565
NB - R	78		81		11	81
SB - L	46		48		114	48
SB - T	341		354	16		370
EB - L	1		2		2	2
EB - T	1		2		29	2
EB - R	6		7		7	7
WB - L	n/a		n/a		45	103

South East Street, South East Street Frontage Road, and Fort River Elementary School						
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1
NB - T	355		368		11	379
NB - R	42		44		46	44
SB - L	22		23		23	23
SB - T	474		491		24	491
EB - L	2		3		3	3
EB - T	1		2		2	2
EB - R	24		25		25	25
WB - L	n/a		n/a		7	74

South East Street, South East Street Frontage Road, and Fort River Elementary						
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1
NB - T	440		456			456
NB - R	13		14		14	14
SB - L	22		23		23	23
SB - T	573		594			594
EB - L	2		3		3	3
EB - T	1		2		2	2
EB - R	28		29		29	29
WB - L	n/a		n/a			17

South East Street at College Street						
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1
NB - L	92		96	10		106
NB - T	120		125			125
NB - R	7		8		8	8
SB - L	178		185	8	22	193
SB - T	110		114	5	14	119
SB - R	73		76	3	9	79
EB - L	61		64		11	64
EB - T	146		152			152
EB - R	16		17		17	17
WB - L	8		9		9	9
WB - T	264		274	32		306
WB - R	2		3		3	3

South East Street at College Street						
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1
NB - L	42		44			44
NB - T	79		82	3	10	85
NB - R	7		8		8	8
SB - L	309		320			320
SB - T	118		123			123
SB - R	77		80		7	80
EB - L	70		73	1	9	74
EB - T	255		265	28		293
EB - R	62		65	10		75
WB - L	14		15		15	15
WB - T	171		178			178
WB - R	2		3		3	3

South East Street at College Street						
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1
NB - L	67		70			70
NB - T	83		86			86
NB - R	12		13		13	13
SB - L	395		410			410
SB - T	133		138			138
SB - R	66		69		69	69
EB - L	92		96			96
EB - T	368		382			382
EB - R	74		77		77	77
WB - L	8		9		9	9
WB - T	216		224			224
WB - R	1		2		2	2

South East Street at Belchertown Road						
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1
NB - T	183		190			190
SB - T	361		374			374
WB - L	5		6		6	6
WB - R	442		458		458	458

South East Street at Belchertown Road						
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1
NB - T	151		157			157
SB - T	504		522			522
WB - L	5		6		6	6
WB - R	224		232	7	27	239

South East Street at Belchertown Road						
	2022 Existing	Other Development	2029 No-Build	Site Gen. 1	Site Gen. 2	2029 Build 1
NB - T	176		183			183
SB - T	594		616			616
WB - L	3		4		4	4
WB - R	274		284		284	284

Massachusetts School and District Profiles

Fort River Elementary

Enrollment Data

Enrollment by Race/Ethnicity (2021-22)			
Race	% of School	% of District	% of State
African American	7.1	11.7	9.3
Asian	11.4	11.1	7.2
Hispanic	29.9	23.0	23.1
Native American	0.3	0.4	0.2
White	43.9	45.8	55.7
Native Hawaiian, Pacific Islander	0.3	0.2	0.1
Multi-Race, Non-Hispanic	7.1	7.9	4.3

Enrollment by Gender (2021-22)			
	School	District	State
Female	163	516	442,763
Male	188	530	467,772
Non-Binary	0	7	994
Total	351	1,053	911,529

Enrollment by Grade (2021-22)																
	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	SP	Total
District	55	127	142	140	145	138	154	152	0	0	0	0	0	0	0	1,053
Fort River Elementary	0	55	52	61	41	38	60	44	0	0	0	0	0	0	0	351

Kindergarten Enrollment (2021-22)						
Student Group	Kindergarten Enrollment				Full-day Kindergarten	
	Total	Part-time	Tuitioned	Full-time	Total	Percent
All Students	55	0	0	55	55	100.0
High Needs	25	0	0	25	25	100.0
Low Income	17	0	0	17	17	100.0
LEP English language learner	6	0	0	6	6	100.0
Students with disabilities	7	0	0	7	7	100.0
African American/Black	4					
Asian	3					
Hispanic or Latino	21	0	0	21	21	100.0
Multi-race, non-Hispanic or Latino	2					
White	25	0	0	25	25	100.0

Massachusetts School and District Profiles

Wildwood Elementary

Enrollment Data

Enrollment by Race/Ethnicity (2021-22)			
Race	% of School	% of District	% of State
African American	15.7	11.7	9.3
Asian	9.6	11.1	7.2
Hispanic	21.5	23.0	23.1
Native American	0.6	0.4	0.2
White	45.9	45.8	55.7
Native Hawaiian, Pacific Islander	0.0	0.2	0.1
Multi-Race, Non-Hispanic	6.7	7.9	4.3

Enrollment by Gender (2021-22)			
	School	District	State
Female	180	516	442,763
Male	162	530	467,772
Non-Binary	2	7	994
Total	344	1,053	911,529

Enrollment by Grade (2021-22)																
	PK	K	1	2	3	4	5	6	7	8	9	10	11	12	SP	Total
District	55	127	142	140	145	138	154	152	0	0	0	0	0	0	0	1,053
Wildwood Elementary	0	40	42	47	48	60	47	60	0	0	0	0	0	0	0	344

Kindergarten Enrollment (2021-22)						
Student Group	Kindergarten Enrollment				Full-day Kindergarten	
	Total	Part-time	Tuitioned	Full-time	Total	Percent
All Students	40	0	0	40	40	100.0
High Needs	25	0	0	25	25	100.0
Low Income	24	0	0	24	24	100.0
LEP English language learner	7	0	0	7	7	100.0
Students with disabilities	8	0	0	8	8	100.0
African American/Black	9	0	0	9	9	100.0
Asian	5					
Hispanic or Latino	7	0	0	7	7	100.0
Multi-race, non-Hispanic or Latino	3					
White	16	0	0	16	16	100.0

Appendix F

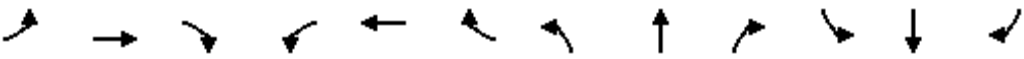






Capacity Analysis Worksheets



Lanes, Volumes, Timings

5: South East Street/North East Street & Main Street

Existing
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	91	85	84	284	61	253	256	53	28	169	48
Future Volume (vph)	18	91	85	84	284	61	253	256	53	28	169	48
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	100		0	0		0
Storage Lanes	0		1	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	0.97		0.99			0.99			1.00	
Frt			0.850		0.981			0.974			0.974	
Flt Protected		0.992			0.990		0.950				0.994	
Satd. Flow (prot)	0	1839	1524	0	1789	0	1736	1791	0	0	1781	0
Flt Permitted		0.906			0.908		0.467				0.857	
Satd. Flow (perm)	0	1678	1477	0	1638	0	853	1791	0	0	1534	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			90		11			14			16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2205			457			209			3887	
Travel Time (s)		50.1			10.4			4.8			88.3	
Confl. Peds. (#/hr)	10		7	7		10			11	11		
Peak Hour Factor	0.94	0.94	0.94	0.88	0.88	0.88	0.84	0.84	0.84	0.81	0.81	0.81
Heavy Vehicles (%)	0%	3%	6%	2%	3%	2%	4%	2%	6%	4%	3%	4%
Adj. Flow (vph)	19	97	90	95	323	69	301	305	63	35	209	59
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	116	90	0	487	0	301	368	0	0	303	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0		11.0	11.0		11.0	11.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0		29.0	29.0		29.0	29.0	
Total Split (%)	39.7%	39.7%	39.7%	39.7%	39.7%		37.2%	37.2%		37.2%	37.2%	
Maximum Green (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		24.7	24.7		24.7		24.0	24.0			24.0	
Actuated g/C Ratio		0.32	0.32		0.32		0.31	0.31			0.31	
v/c Ratio		0.22	0.17		0.91		1.13	0.65			0.62	













Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

Existing
AM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	23%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings 5: South East Street/North East Street & Main Street

Existing
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		20.0	5.4		48.5		123.9	28.4			28.1	
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	
Total Delay		20.0	5.4		48.5		123.9	28.4			28.1	
LOS		C	A		D		F	C			C	
Approach Delay		13.7			48.5			71.4			28.1	
Approach LOS		B			D			E			C	
Queue Length 50th (ft)		40	0		216		~175	148			118	
Queue Length 95th (ft)		78	29		#378		#293	217			174	
Internal Link Dist (ft)		2125			377			129			3807	
Turn Bay Length (ft)			200				100					
Base Capacity (vph)		569	560		562		267	570			491	
Starvation Cap Reductn		0	0		0		0	0			0	
Spillback Cap Reductn		0	0		0		0	0			0	
Storage Cap Reductn		0	0		0		0	0			0	
Reduced v/c Ratio		0.20	0.16		0.87		1.13	0.65			0.62	

Intersection Summary

Area Type: Other

Cycle Length: 78

Actuated Cycle Length: 76.7

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.13

Intersection Signal Delay: 49.7

Intersection LOS: D

Intersection Capacity Utilization 72.9%

ICU Level of Service C

Analysis Period (min) 15






~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: South East Street/North East Street & Main Street

 Ø2	 Ø4	 Ø9
31 s	29 s	18 s
 Ø6	 Ø8	
31 s	29 s	

Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street


















Existing
AM Peak

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

11: Dickinson Street/Triangle Street & Main Street

Existing
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	35	127	3	7	215	350	6	60	9	94	13	7
Future Volume (vph)	35	127	3	7	215	350	6	60	9	94	13	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.997				0.850		0.984			0.991	
Flt Protected		0.990			0.999			0.996			0.961	
Satd. Flow (prot)	0	1783	0	0	1862	1615	0	1826	0	0	1791	0
Flt Permitted		0.549			0.988			0.975			0.441	
Satd. Flow (perm)	0	989	0	0	1841	1615	0	1787	0	0	820	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				469		3			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		642			1170			794			2730	
Travel Time (s)		14.6			26.6			18.0			62.0	
Confl. Peds. (#/hr)			10	10			3		3	3		3
Peak Hour Factor	0.79	0.79	0.79	0.74	0.74	0.74	0.59	0.59	0.59	0.73	0.73	0.73
Heavy Vehicles (%)	6%	5%	0%	0%	2%	0%	0%	2%	0%	0%	0%	14%
Adj. Flow (vph)	44	161	4	9	291	473	10	102	15	129	18	10
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	209	0	0	300	473	0	127	0	0	157	0
Turn Type	Perm	NA		Perm	NA	custom	Perm	NA		Perm	NA	
Protected Phases		2			6	7		8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6	7	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	16.0	16.0		16.0	16.0	14.0	14.0	14.0		14.0	14.0	
Total Split (s)	66.0	66.0		66.0	66.0	36.0	31.0	31.0		66.0	66.0	
Total Split (%)	40.5%	40.5%		40.5%	40.5%	22.1%	19.0%	19.0%		40.5%	40.5%	
Maximum Green (s)	60.0	60.0		60.0	60.0	30.0	25.0	25.0		60.0	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0			6.0	6.0		6.0			6.0	
Lead/Lag						Lead	Lag	Lag				
Lead-Lag Optimize?						Yes	Yes	Yes				
Vehicle Extension (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
Recall Mode	None	None		None	None	None	Min	Min		Min	Min	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		25.4			25.4	11.3		30.2			47.6	
Actuated g/C Ratio		0.22			0.22	0.10		0.26			0.41	
v/c Ratio		0.97			0.75	0.82		0.27			0.47	













Lanes, Volumes, Timings
11: Dickinson Street/Triangle Street & Main Street

Existing
AM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	18%
Maximum Green (s)	28.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	10.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings
11: Dickinson Street/Triangle Street & Main Street

Existing
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		100.4			56.1	17.2		36.6			30.2	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		100.4			56.1	17.2		36.6			30.2	
LOS		F			E	B		D			C	
Approach Delay		100.4			32.3			36.6			30.2	
Approach LOS		F			C			D			C	
Queue Length 50th (ft)		162			220	3		71			83	
Queue Length 95th (ft)		#247			268	12		94			123	
Internal Link Dist (ft)		562			1090			714			2650	
Turn Bay Length (ft)						250						
Base Capacity (vph)		526			978	773		509			443	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.40			0.31	0.61		0.25			0.35	

Intersection Summary

Area Type: Other

Cycle Length: 163

Actuated Cycle Length: 116.2

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 43.7

Intersection LOS: D

Intersection Capacity Utilization 52.2%

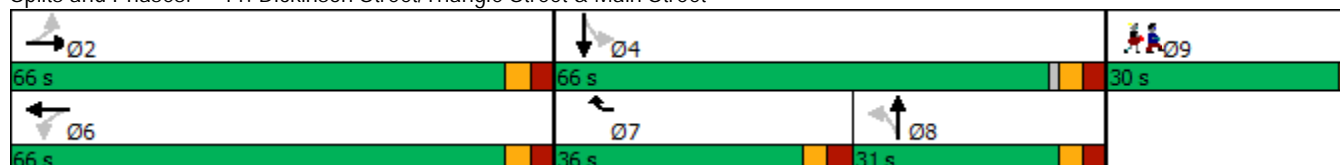
ICU Level of Service A

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 11: Dickinson Street/Triangle Street & Main Street












Lanes, Volumes, Timings
11: Dickinson Street/Triangle Street & Main Street

Existing
AM Peak

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
28: South East Street & College Street

Existing
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	61	146	16	8	264	2	92	120	7	178	110	73
Future Volume (vph)	61	146	16	8	264	2	92	120	7	178	110	73
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	100		0	150		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			1.00				0.99	
Frt		0.985			0.999			0.992			0.940	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1772	0	1805	1898	0	1787	1752	0	1752	1691	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1772	0	1801	1898	0	1778	1752	0	1752	1691	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3						1			16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		879			332			445			264	
Travel Time (s)		20.0			7.5			10.1			6.0	
Confl. Peds. (#/hr)			1	1			2					2
Peak Hour Factor	0.75	0.75	0.75	0.74	0.74	0.74	0.78	0.78	0.78	0.87	0.87	0.87
Heavy Vehicles (%)	2%	6%	0%	0%	0%	0%	1%	8%	0%	3%	5%	4%
Adj. Flow (vph)	81	195	21	11	357	3	118	154	9	205	126	84
Shared Lane Traffic (%)												
Lane Group Flow (vph)	81	216	0	11	360	0	118	163	0	205	210	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		10.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	12.0		15.0	12.0		11.0	12.0		11.0	12.0	
Total Split (s)	35.0	56.0		35.0	56.0		35.0	56.0		35.0	56.0	
Total Split (%)	17.5%	28.0%		17.5%	28.0%		17.5%	28.0%		17.5%	28.0%	
Maximum Green (s)	30.0	50.0		30.0	50.0		30.0	50.0		30.0	50.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	10.7	39.6		10.4	28.6		13.4	17.0		20.4	23.9	
Actuated g/C Ratio	0.09	0.33		0.09	0.24		0.11	0.14		0.17	0.20	
v/c Ratio	0.51	0.36		0.07	0.79		0.58	0.65		0.68	0.59	













Lanes, Volumes, Timings
28: South East Street & College Street

Existing
AM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	9%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	6.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings 28: South East Street & College Street

Existing
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	68.2	34.8		62.2	56.7		66.1	63.3		60.8	49.0	
Queue Delay	0.0	0.0		0.0	0.4		0.0	0.0		0.0	0.0	
Total Delay	68.2	34.8		62.2	57.1		66.1	63.3		60.8	49.0	
LOS	E	C		E	E		E	E		E	D	
Approach Delay		43.9			57.3			64.5			54.9	
Approach LOS		D			E			E			D	
Queue Length 50th (ft)	59	112		8	253		85	116		146	133	
Queue Length 95th (ft)	112	199		26	348		156	198		273	252	
Internal Link Dist (ft)		799			252			365			184	
Turn Bay Length (ft)	250			100			150			200		
Base Capacity (vph)	467	781		476	835		472	771		462	753	
Starvation Cap Reductn	0	0		0	157		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.17	0.28		0.02	0.53		0.25	0.21		0.44	0.28	

Intersection Summary

Area Type: Other

Cycle Length: 200

Actuated Cycle Length: 118.4

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 55.1










Intersection LOS: E

Intersection Capacity Utilization 54.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 28: South East Street & College Street

 Ø1	 Ø2	 Ø3	 Ø4	 Ø9
35 s	56 s	35 s	56 s	18 s
 Ø5	 Ø6	 Ø7	 Ø8	
35 s	56 s	35 s	56 s	




Lanes, Volumes, Timings
28: South East Street & College Street

Existing
AM Peak

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

HCM 6th TWSC
1: East Pleasant Street & Strong Street




Existing
AM Peak

Intersection						
Int Delay, s/veh	7.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	59	183	155	57	92	311
Future Vol, veh/h	59	183	155	57	92	311
Conflicting Peds, #/hr	8	1	0	9	9	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	74	74	67	67	78	78
Heavy Vehicles, %	5	2	4	4	7	5
Mvmt Flow	80	247	231	85	118	399
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	926	284	0	0	325	0
Stage 1	283	-	-	-	-	-
Stage 2	643	-	-	-	-	-
Critical Hdwy	6.45	6.22	-	-	4.17	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.318	-	-	2.263	-
Pot Cap-1 Maneuver	295	755	-	-	1207	-
Stage 1	758	-	-	-	-	-
Stage 2	518	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	253	748	-	-	1197	-
Mov Cap-2 Maneuver	253	-	-	-	-	-
Stage 1	751	-	-	-	-	-
Stage 2	449	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	24.2	0		1.9		
HCM LOS	C					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	506	1197	-
HCM Lane V/C Ratio		-	-	0.646	0.099	-
HCM Control Delay (s)		-	-	24.2	8.3	0
HCM Lane LOS		-	-	C	A	A
HCM 95th %tile Q(veh)		-	-	4.6	0.3	-

HCM 6th TWSC

2: North East Street & Strong Street

Existing
AM Peak

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	49	136	164	160	16
Future Vol, veh/h	9	49	136	164	160	16
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	76	76	89	89	83	83
Heavy Vehicles, %	11	2	0	3	3	0
Mvmt Flow	12	64	153	184	193	19
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	693	203	212	0	-	0
Stage 1	203	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Critical Hdwy	6.51	6.22	4.1	-	-	-
Critical Hdwy Stg 1	5.51	-	-	-	-	-
Critical Hdwy Stg 2	5.51	-	-	-	-	-
Follow-up Hdwy	3.599	3.318	2.2	-	-	-
Pot Cap-1 Maneuver	396	838	1370	-	-	-
Stage 1	810	-	-	-	-	-
Stage 2	598	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	347	838	1370	-	-	-
Mov Cap-2 Maneuver	347	-	-	-	-	-
Stage 1	710	-	-	-	-	-
Stage 2	598	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.9	3.6		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1370	-	687	-	-	
HCM Lane V/C Ratio	0.112	-	0.111	-	-	
HCM Control Delay (s)	8	0	10.9	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.4	-	0.4	-	-	

HCM 6th TWSC
8: South Whitney Street/North Whitney Street & Main Street




Existing
AM Peak

Intersection												
Int Delay, s/veh	3.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	3	195	13	26	583	7	48	9	25	4	4	9
Future Vol, veh/h	3	195	13	26	583	7	48	9	25	4	4	9
Conflicting Peds, #/hr	18	0	5	5	0	18	3	0	1	1	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	75	75	75	75	75	75	81	81	81	80	80	80
Heavy Vehicles, %	0	3	0	0	4	0	0	0	12	0	0	0
Mvmt Flow	4	260	17	35	777	9	59	11	31	5	5	11
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	804	0	0	282	0	0	1145	1156	275	1169	1160	803
Stage 1	-	-	-	-	-	-	282	282	-	870	870	-
Stage 2	-	-	-	-	-	-	863	874	-	299	290	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.32	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.408	3.5	4	3.3
Pot Cap-1 Maneuver	829	-	-	1292	-	-	178	198	740	172	197	387
Stage 1	-	-	-	-	-	-	729	681	-	349	372	-
Stage 2	-	-	-	-	-	-	352	370	-	714	676	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	815	-	-	1286	-	-	161	183	736	148	182	379
Mov Cap-2 Maneuver	-	-	-	-	-	-	161	183	-	148	182	-
Stage 1	-	-	-	-	-	-	721	674	-	341	348	-
Stage 2	-	-	-	-	-	-	320	346	-	668	669	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.3			35.8			21.9		
HCM LOS							E			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	215	815	-	-	1286	-	-	234				
HCM Lane V/C Ratio	0.471	0.005	-	-	0.027	-	-	0.091				
HCM Control Delay (s)	35.8	9.4	0	-	7.9	0	-	21.9				
HCM Lane LOS	E	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	2.3	0	-	-	0.1	-	-	0.3				

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Vol, veh/h	1	1	6	0	0	0	0	545	78	46	341	0
Future Vol, veh/h	1	1	6	0	0	0	0	545	78	46	341	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	50	50	50	92	92	92	92	84	84	83	83	92
Heavy Vehicles, %	0	0	17	2	2	2	0	3	8	9	4	0
Mvmt Flow	2	2	12	0	0	0	0	649	93	55	411	0
Major/Minor	Minor2						Major1		Major2			
Conflicting Flow All	1218	1265	411				-	0	0	744	0	0
Stage 1	521	521	-				-	-	-	-	-	-
Stage 2	697	744	-				-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.37				-	-	-	4.19	-	-
Critical Hdwy Stg 1	5.4	5.5	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-				-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.453				-	-	-	2.281	-	-
Pot Cap-1 Maneuver	201	171	610				0	-	-	833	-	0
Stage 1	600	535	-				0	-	-	-	-	0
Stage 2	498	424	-				0	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	184	0	610				-	-	-	833	-	-
Mov Cap-2 Maneuver	184	0	-				-	-	-	-	-	-
Stage 1	600	0	-				-	-	-	-	-	-
Stage 2	455	0	-				-	-	-	-	-	-
Approach	EB						NB		SB			
HCM Control Delay, s	13.1						0		1.1			
HCM LOS	B											
Minor Lane/Major Mvmt		NBT	NBR	EBLn1	SBL	SBT						
Capacity (veh/h)		-	-	458	833	-						
HCM Lane V/C Ratio		-	-	0.035	0.067	-						
HCM Control Delay (s)		-	-	13.1	9.6	0						
HCM Lane LOS		-	-	B	A	A						
HCM 95th %tile Q(veh)		-	-	0.1	0.2	-						




HCM 6th TWSC
17: South East Street & Fort River Exit

Existing
AM Peak

Intersection						
Int Delay, s/veh	10.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	56	52	548	0	0	340
Future Vol, veh/h	56	52	548	0	0	340
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	43	43	78	78	90	90
Heavy Vehicles, %	9	8	4	0	2	4
Mvmt Flow	130	121	703	0	0	378
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1081	703	0	-	-	-
Stage 1	703	-	-	-	-	-
Stage 2	378	-	-	-	-	-
Critical Hdwy	6.49	6.28	-	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.372	-	-	-	-
Pot Cap-1 Maneuver	234	428	-	0	0	-
Stage 1	478	-	-	0	0	-
Stage 2	678	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	234	428	-	-	-	-
Mov Cap-2 Maneuver	234	-	-	-	-	-
Stage 1	478	-	-	-	-	-
Stage 2	678	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	57.5	0	0			
HCM LOS	F					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	-		299			
HCM Lane V/C Ratio	-		0.84			
HCM Control Delay (s)	-		57.5			
HCM Lane LOS	-		F			
HCM 95th %tile Q(veh)	-		7.2			




HCM 6th TWSC
19: Hills Road & Strong Street

Existing
AM Peak

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	55	17	1	200	9	0
Future Vol, veh/h	55	17	1	200	9	0
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	64	64	88	88	33	33
Heavy Vehicles, %	9	18	0	2	0	0
Mvmt Flow	86	27	1	227	27	0
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	116	0	332	103
Stage 1	-	-	-	-	103	-
Stage 2	-	-	-	-	229	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1485	-	667	957
Stage 1	-	-	-	-	926	-
Stage 2	-	-	-	-	814	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1481	-	664	954
Mov Cap-2 Maneuver	-	-	-	-	664	-
Stage 1	-	-	-	-	923	-
Stage 2	-	-	-	-	813	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0		10.7	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	664	-	-	1481	-	
HCM Lane V/C Ratio	0.041	-	-	0.001	-	
HCM Control Delay (s)	10.7	-	-	7.4	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

HCM 6th TWSC
21: Red Gate Lane & Strong Street

Existing
AM Peak

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	51	4	12	185	9	7
Future Vol, veh/h	51	4	12	185	9	7
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	53	53	79	79	71	71
Heavy Vehicles, %	6	0	0	0	11	0
Mvmt Flow	96	8	15	234	13	10




Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	105
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1499
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1498
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	10.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	725	-	-	1498	-
HCM Lane V/C Ratio	0.031	-	-	0.01	-
HCM Control Delay (s)	10.1	-	-	7.4	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 6th TWSC
26: East Pleasant Street & Clark Hill Road

Existing
AM Peak

Intersection						
Int Delay, s/veh	1.4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	5	21	74	265	380	19
Future Vol, veh/h	5	21	74	265	380	19
Conflicting Peds, #/hr	0	6	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	75	75	71	71	78	78
Heavy Vehicles, %	20	19	4	6	6	5
Mvmt Flow	7	28	104	373	487	24




Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	1085	510	516	0	-	0
Stage 1	504	-	-	-	-	-
Stage 2	581	-	-	-	-	-
Critical Hdwy	6.6	6.39	4.14	-	-	-
Critical Hdwy Stg 1	5.6	-	-	-	-	-
Critical Hdwy Stg 2	5.6	-	-	-	-	-
Follow-up Hdwy	3.68	3.471	2.236	-	-	-
Pot Cap-1 Maneuver	222	531	1040	-	-	-
Stage 1	572	-	-	-	-	-
Stage 2	525	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	192	525	1035	-	-	-
Mov Cap-2 Maneuver	192	-	-	-	-	-
Stage 1	497	-	-	-	-	-
Stage 2	522	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	15	1.9	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1035	-	394	-	-
HCM Lane V/C Ratio	0.101	-	0.088	-	-
HCM Control Delay (s)	8.9	0	15	-	-
HCM Lane LOS	A	A	C	-	-
HCM 95th %tile Q(veh)	0.3	-	0.3	-	-




HCM 6th TWSC
32: South East Street & Belchertwon Road

Existing
AM Peak

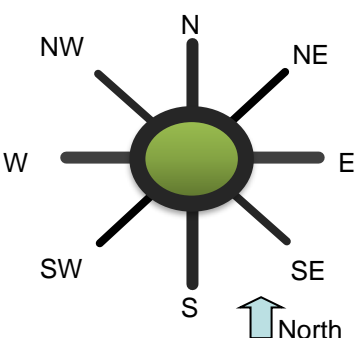
Intersection						
Int Delay, s/veh	9.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	442	183	0	0	361
Future Vol, veh/h	5	442	183	0	0	361
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	78	78	87	87
Heavy Vehicles, %	0	3	8	0	0	5
Mvmt Flow	6	567	235	0	0	415
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	650	235	0	-	-	-
Stage 1	235	-	-	-	-	-
Stage 2	415	-	-	-	-	-
Critical Hdwy	6.4	6.23	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	-	-	-	-
Pot Cap-1 Maneuver	437	802	-	0	0	-
Stage 1	809	-	-	0	0	-
Stage 2	671	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	437	802	-	-	-	-
Mov Cap-2 Maneuver	437	-	-	-	-	-
Stage 1	809	-	-	-	-	-
Stage 2	671	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	20.3	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 795		-			
HCM Lane V/C Ratio	- 0.721		-			
HCM Control Delay (s)	- 20.3		-			
HCM Lane LOS	- C		-			
HCM 95th %tile Q(veh)	- 6.3		-			

HCM 6th TWSC
33: Wildwood Driveway & Strong Street

Existing
AM Peak

Intersection						
Int Delay, s/veh	5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	44	126	52	143	77	22
Future Vol, veh/h	44	126	52	143	77	22
Conflicting Peds, #/hr	0	7	7	0	0	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	92	92	49	49
Heavy Vehicles, %	2	5	2	0	10	5
Mvmt Flow	68	194	57	155	157	45
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	269	0	441	175
Stage 1	-	-	-	-	172	-
Stage 2	-	-	-	-	269	-
Critical Hdwy	-	-	4.12	-	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.218	-	3.59	3.345
Pot Cap-1 Maneuver	-	-	1295	-	559	861
Stage 1	-	-	-	-	839	-
Stage 2	-	-	-	-	758	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1286	-	528	853
Mov Cap-2 Maneuver	-	-	-	-	528	-
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	721	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.1		14.6	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	577	-	-	1286	-	
HCM Lane V/C Ratio	0.35	-	-	0.044	-	
HCM Control Delay (s)	14.6	-	-	7.9	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	1.6	-	-	0.1	-	

General & Site Information v 4.2								
Analyst:		Eric Beaudry						
Agency/Co:		Pare Corporation						
Date:		4/26/2022						
Project or PI#:		21245.00 Amherst Elementary Schools						
Year, Peak Hour:		2022 Existing AM						
County/District:		Amherst, MA						
Intersection Name:		East Pleasant Street at Triangle Street						



Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			52		165		36	
	NE (2), vph								
	E (3), vph	46				24		117	
	SE (4), vph								
	S (5), vph	178		52				119	
	SW (6), vph								
	W (7), vph	46		292		149			
	NW (8), vph								
Output	Total Vehicles	270	0	396	0	338	0	272	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	96.0%	100.0%	99.0%	100.0%	92.0%	100.0%	93.0%	100.0%
% Heavy Vehicles	4.0%	0.0%	1.0%	0.0%	8.0%	0.0%	7.0%	0.0%
% Bicycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.79	0.95	0.58	0.95	0.92	0.95	0.69	0.95
F _{HV}	0.962	1.000	0.990	1.000	0.926	1.000	0.935	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	91	0	194	0	56	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	61	0	0	0	28	0	181	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	234	0	91	0	0	0	185	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	61	0	508	0	175	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	355	0	690	0	397	0	422	0
Conflicting flow, pcu/h	774	0	424	0	298	0	385	0

Results: Approach Measures of Effectiveness

HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	603	NA	886	NA	943	NA	870	NA
Entry Flow Rates, vph	342	0	683	0	367	0	394	0
V/C ratio	0.57		0.77		0.39		0.45	
Control Delay, sec/pcu	16.3		20.1		8.2		9.8	
LOS	C		C		A		A	
Average Queue (ft)	39		95		21		27	
95th % Queue (ft)	92		195		50		64	

Overall Intersection Measures of Effectiveness



















Int Control Delay (sec)	14.7	Int LOS	B	Max Approach V/C	0.77
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Notes: v 4.2

Lanes, Volumes, Timings

5: South East Street/North East Street & Main Street

No Build
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	95	89	87	295	64	262	266	55	29	176	50
Future Volume (vph)	19	95	89	87	295	64	262	266	55	29	176	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	100		0	0		0
Storage Lanes	0		1	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	0.97		0.99			0.99			1.00	
Frt			0.850		0.981			0.974			0.974	
Flt Protected		0.992			0.990		0.950				0.994	
Satd. Flow (prot)	0	1839	1524	0	1788	0	1736	1791	0	0	1781	0
Flt Permitted		0.897			0.906		0.496				0.913	
Satd. Flow (perm)	0	1661	1477	0	1634	0	906	1791	0	0	1634	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			97		12			14			16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2205			457			209			3887	
Travel Time (s)		50.1			10.4			4.8			88.3	
Confl. Peds. (#/hr)	10		7	7		10			11	11		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	6%	2%	3%	2%	4%	2%	6%	4%	3%	4%
Adj. Flow (vph)	21	103	97	95	321	70	285	289	60	32	191	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	124	97	0	486	0	285	349	0	0	277	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0		11.0	11.0		11.0	11.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0		29.0	29.0		29.0	29.0	
Total Split (%)	39.7%	39.7%	39.7%	39.7%	39.7%		37.2%	37.2%		37.2%	37.2%	
Maximum Green (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		24.6	24.6		24.6		24.0	24.0			24.0	
Actuated g/C Ratio		0.32	0.32		0.32		0.31	0.31			0.31	
v/c Ratio		0.23	0.18		0.91		1.01	0.61			0.53	













Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

No Build
AM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	23%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

No Build
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		20.3	5.3		48.6		86.0	27.3			25.3	
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	
Total Delay		20.3	5.3		48.6		86.0	27.3			25.3	
LOS		C	A		D		F	C			C	
Approach Delay		13.7			48.6			53.7			25.3	
Approach LOS		B			D			D			C	
Queue Length 50th (ft)		43	0		215		~143	138			104	
Queue Length 95th (ft)		82	30		#392		#296	225			179	
Internal Link Dist (ft)		2125			377			129			3807	
Turn Bay Length (ft)			200				100					
Base Capacity (vph)		563	565		562		283	570			522	
Starvation Cap Reductn		0	0		0		0	0			0	
Spillback Cap Reductn		0	0		0		0	0			0	
Storage Cap Reductn		0	0		0		0	0			0	
Reduced v/c Ratio		0.22	0.17		0.86		1.01	0.61			0.53	

Intersection Summary

Area Type: Other

Cycle Length: 78

Actuated Cycle Length: 76.7

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.01

Intersection Signal Delay: 41.8

Intersection LOS: D

Intersection Capacity Utilization 75.0%

ICU Level of Service D

Analysis Period (min) 15






~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: South East Street/North East Street & Main Street

 Ø2	 Ø4	 Ø9
31 s	29 s	18 s
 Ø6	 Ø8	
31 s	29 s	

Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street


















No Build
AM Peak

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

11: Dickinson Street/Triangle Street & Main Street

No Build
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	132	4	8	223	363	7	63	10	98	14	8
Future Volume (vph)	37	132	4	8	223	363	7	63	10	98	14	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.997				0.850		0.983			0.991	
Flt Protected		0.989			0.998			0.995			0.961	
Satd. Flow (prot)	0	1781	0	0	1860	1615	0	1823	0	0	1789	0
Flt Permitted		0.726			0.986			0.957			0.339	
Satd. Flow (perm)	0	1308	0	0	1837	1615	0	1752	0	0	630	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				395		4			3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		642			1170			794			2730	
Travel Time (s)		14.6			26.6			18.0			62.0	
Confl. Peds. (#/hr)			10	10			3		3	3		3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	5%	0%	0%	2%	0%	0%	2%	0%	0%	0%	14%
Adj. Flow (vph)	40	143	4	9	242	395	8	68	11	107	15	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	187	0	0	251	395	0	87	0	0	131	0
Turn Type	Perm	NA		Perm	NA	custom	Perm	NA		Perm	NA	
Protected Phases		2			6	7		8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6	7	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	16.0	16.0		16.0	16.0	14.0	14.0	14.0		14.0	14.0	
Total Split (s)	66.0	66.0		66.0	66.0	36.0	31.0	31.0		66.0	66.0	
Total Split (%)	40.5%	40.5%		40.5%	40.5%	22.1%	19.0%	19.0%		40.5%	40.5%	
Maximum Green (s)	60.0	60.0		60.0	60.0	30.0	25.0	25.0		60.0	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0			6.0	6.0		6.0			6.0	
Lead/Lag						Lead	Lag	Lag				
Lead-Lag Optimize?						Yes	Yes	Yes				
Vehicle Extension (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		19.4			19.4	11.6		12.5			26.6	
Actuated g/C Ratio		0.22			0.22	0.13		0.14			0.30	
v/c Ratio		0.66			0.63	0.71		0.35			0.69	













Lanes, Volumes, Timings
11: Dickinson Street/Triangle Street & Main Street

No Build
AM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	18%
Maximum Green (s)	28.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	10.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings
11: Dickinson Street/Triangle Street & Main Street

No Build
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		45.6			41.0	12.5		40.4			47.4	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		45.6			41.0	12.5		40.4			47.4	
LOS		D			D	B		D			D	
Approach Delay		45.6			23.6			40.4			47.4	
Approach LOS		D			C			D			D	
Queue Length 50th (ft)		92			124	0		42			61	
Queue Length 95th (ft)		201			249	93		104			145	
Internal Link Dist (ft)		562			1090			714			2650	
Turn Bay Length (ft)						250						
Base Capacity (vph)		908			1275	818		509			457	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.21			0.20	0.48		0.17			0.29	

Intersection Summary

Area Type: Other

Cycle Length: 163

Actuated Cycle Length: 89.5

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 31.9







Intersection LOS: C

Intersection Capacity Utilization 53.4%

ICU Level of Service A

Analysis Period (min) 15





















Splits and Phases: 11: Dickinson Street/Triangle Street & Main Street

 Ø2	 Ø4	 Ø9
66 s	66 s	30 s
 Ø6	 Ø7	 Ø8
66 s	36 s	31 s

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
28: South East Street & College Street

No Build
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	152	17	9	274	3	96	125	8	185	114	76
Future Volume (vph)	64	152	17	9	274	3	96	125	8	185	114	76
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	100		0	150		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			0.99				0.99	
Frt		0.985			0.999			0.991			0.940	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1772	0	1805	1898	0	1787	1751	0	1752	1691	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1772	0	1800	1898	0	1778	1751	0	1752	1691	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3						2			16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		879			332			445			264	
Travel Time (s)		20.0			7.5			10.1			6.0	
Confl. Peds. (#/hr)			1	1			2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	6%	0%	0%	0%	0%	1%	8%	0%	3%	5%	4%
Adj. Flow (vph)	70	165	18	10	298	3	104	136	9	201	124	83
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	183	0	10	301	0	104	145	0	201	207	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		10.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	12.0		15.0	12.0		11.0	12.0		11.0	12.0	
Total Split (s)	35.0	56.0		35.0	56.0		35.0	56.0		35.0	56.0	
Total Split (%)	17.5%	28.0%		17.5%	28.0%		17.5%	28.0%		17.5%	28.0%	
Maximum Green (s)	30.0	50.0		30.0	50.0		30.0	50.0		30.0	50.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	9.6	32.6		10.6	23.3		11.8	14.8		18.9	21.9	
Actuated g/C Ratio	0.09	0.31		0.10	0.22		0.11	0.14		0.18	0.21	
v/c Ratio	0.43	0.33		0.06	0.72		0.52	0.59		0.64	0.57	













Lanes, Volumes, Timings
28: South East Street & College Street

No Build
AM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	9%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	6.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings
28: South East Street & College Street

No Build
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	60.6	31.6		55.7	51.2		59.3	56.3		53.6	44.0	
Queue Delay	0.0	0.0		0.0	0.1		0.0	0.0		0.0	0.0	
Total Delay	60.6	31.6		55.7	51.3		59.3	56.3		53.6	44.0	
LOS	E	C		E	D		E	E		D	D	
Approach Delay	39.6			51.4			57.6			48.7		
Approach LOS	D			D			E			D		
Queue Length 50th (ft)	46	87		6	191		68	92		128	118	
Queue Length 95th (ft)	113	205		28	352		152	194		251	234	
Internal Link Dist (ft)	799			252			365			184		
Turn Bay Length (ft)	250			100			150			200		
Base Capacity (vph)	531	888		542	950		536	877		526	854	
Starvation Cap Reductn	0	0		0	97		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.13	0.21		0.02	0.35		0.19	0.17		0.38	0.24	

Intersection Summary

Area Type: Other

Cycle Length: 200

Actuated Cycle Length: 105.7

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 49.3










Intersection LOS: D

Intersection Capacity Utilization 55.2%

ICU Level of Service B

Analysis Period (min) 15




Splits and Phases: 28: South East Street & College Street

 Ø1	 Ø2	 Ø3	 Ø4	 Ø9
35 s	56 s	35 s	56 s	18 s
 Ø5	 Ø6	 Ø7	 Ø8	
35 s	56 s	35 s	56 s	

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

HCM 6th TWSC
1: East Pleasant Street & Strong Street

No Build
AM Peak

Intersection						
Int Delay, s/veh	5.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	62	190	161	60	96	323
Future Vol, veh/h	62	190	161	60	96	323
Conflicting Peds, #/hr	8	1	0	9	9	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	2	4	4	7	5
Mvmt Flow	67	207	175	65	104	351

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	784	218	0
Stage 1	217	-	-
Stage 2	567	-	-
Critical Hdwy	6.45	6.22	-
Critical Hdwy Stg 1	5.45	-	-
Critical Hdwy Stg 2	5.45	-	-
Follow-up Hdwy	3.545	3.318	-
Pot Cap-1 Maneuver	358	822	-
Stage 1	812	-	-
Stage 2	562	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	316	814	-
Mov Cap-2 Maneuver	316	-	-
Stage 1	805	-	-
Stage 2	501	-	-




Approach	WB	NB	SB
HCM Control Delay, s	16.4	0	1.8
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	587	1277
HCM Lane V/C Ratio	-	-	0.467	0.082
HCM Control Delay (s)	-	-	16.4	8.1
HCM Lane LOS	-	-	C	A
HCM 95th %tile Q(veh)	-	-	2.5	0.3

HCM 6th TWSC

2: North East Street & Strong Street

No Build
AM Peak

Intersection						
Int Delay, s/veh	3.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	51	141	170	166	17
Future Vol, veh/h	10	51	141	170	166	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	11	2	0	3	3	0
Mvmt Flow	11	55	153	185	180	18
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	680	189	198	0	-	0
Stage 1	189	-	-	-	-	-
Stage 2	491	-	-	-	-	-
Critical Hdwy	6.51	6.22	4.1	-	-	-
Critical Hdwy Stg 1	5.51	-	-	-	-	-
Critical Hdwy Stg 2	5.51	-	-	-	-	-
Follow-up Hdwy	3.599	3.318	2.2	-	-	-
Pot Cap-1 Maneuver	403	853	1387	-	-	-
Stage 1	822	-	-	-	-	-
Stage 2	597	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	353	853	1387	-	-	-
Mov Cap-2 Maneuver	353	-	-	-	-	-
Stage 1	721	-	-	-	-	-
Stage 2	597	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.8	3.6		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1387	-	692	-	-	
HCM Lane V/C Ratio	0.11	-	0.096	-	-	
HCM Control Delay (s)	7.9	0	10.8	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.4	-	0.3	-	-	

Intersection												
Int Delay, s/veh	2.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	202	14	27	604	8	50	10	26	5	5	10
Future Vol, veh/h	4	202	14	27	604	8	50	10	26	5	5	10
Conflicting Peds, #/hr	18	0	5	5	0	18	3	0	1	1	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	3	0	0	4	0	0	0	12	0	0	0
Mvmt Flow	4	220	15	29	657	9	54	11	28	5	5	11
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	684	0	0	240	0	0	972	983	234	994	986	683
Stage 1	-	-	-	-	-	-	241	241	-	738	738	-
Stage 2	-	-	-	-	-	-	731	742	-	256	248	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.32	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.408	3.5	4	3.3
Pot Cap-1 Maneuver	919	-	-	1339	-	-	234	251	781	226	250	453
Stage 1	-	-	-	-	-	-	767	710	-	413	427	-
Stage 2	-	-	-	-	-	-	416	425	-	753	705	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	903	-	-	1333	-	-	216	236	777	200	235	444
Mov Cap-2 Maneuver	-	-	-	-	-	-	216	236	-	200	235	-
Stage 1	-	-	-	-	-	-	759	703	-	404	405	-
Stage 2	-	-	-	-	-	-	385	403	-	710	698	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.3			24.2			18.4		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	280	903	-	-	1333	-	-	291				
HCM Lane V/C Ratio	0.334	0.005	-	-	0.022	-	-	0.075				
HCM Control Delay (s)	24.2	9	0	-	7.8	0	-	18.4				
HCM Lane LOS	C	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	1.4	0	-	-	0.1	-	-	0.2				




14: South East Street & South East Street Frontage/Fort River Entrance

AM Peak

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Vol, veh/h	2	2	7	0	0	0	0	565	81	48	354	0
Future Vol, veh/h	2	2	7	0	0	0	0	565	81	48	354	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	17	2	2	2	0	3	8	9	4	0
Mvmt Flow	2	2	8	0	0	0	0	614	88	52	385	0
Major/Minor	Minor2						Major1		Major2			
Conflicting Flow All	1148	1193	385				-	0	0	704	0	0
Stage 1	489	489	-				-	-	-	-	-	-
Stage 2	659	704	-				-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.37				-	-	-	4.19	-	-
Critical Hdwy Stg 1	5.4	5.5	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-				-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.453				-	-	-	2.281	-	-
Pot Cap-1 Maneuver	222	188	631				0	-	-	862	-	0
Stage 1	621	553	-				0	-	-	-	-	0
Stage 2	518	443	-				0	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	205	0	631				-	-	-	862	-	-
Mov Cap-2 Maneuver	205	0	-				-	-	-	-	-	-
Stage 1	621	0	-				-	-	-	-	-	-
Stage 2	478	0	-				-	-	-	-	-	-
Approach	EB						NB		SB			
HCM Control Delay, s	13.6						0		1.1			
HCM LOS	B											
Minor Lane/Major Mvmt		NBT	NBR	EBLn1	SBL	SBT						
Capacity (veh/h)		-	-	432	862	-						
HCM Lane V/C Ratio		-	-	0.028	0.061	-						
HCM Control Delay (s)		-	-	13.6	9.4	0						
HCM Lane LOS		-	-	B	A	A						
HCM 95th %tile Q(veh)		-	-	0.1	0.2	-						




HCM 6th TWSC
17: South East Street & Fort River Exit

No Build
AM Peak

Intersection						
Int Delay, s/veh	2.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	58	54	568	0	0	353
Future Vol, veh/h	58	54	568	0	0	353
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	8	4	0	2	4
Mvmt Flow	63	59	617	0	0	384
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1001	617	0	-	-	-
Stage 1	617	-	-	-	-	-
Stage 2	384	-	-	-	-	-
Critical Hdwy	6.49	6.28	-	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.372	-	-	-	-
Pot Cap-1 Maneuver	261	479	-	0	0	-
Stage 1	525	-	-	0	0	-
Stage 2	673	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	261	479	-	-	-	-
Mov Cap-2 Maneuver	261	-	-	-	-	-
Stage 1	525	-	-	-	-	-
Stage 2	673	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	21.8	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 334		-			
HCM Lane V/C Ratio	- 0.364		-			
HCM Control Delay (s)	- 21.8		-			
HCM Lane LOS	- C		-			
HCM 95th %tile Q(veh)	- 1.6		-			




HCM 6th TWSC
19: Hills Road & Strong Street

No Build
AM Peak

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	57	18	2	208	10	0
Future Vol, veh/h	57	18	2	208	10	0
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	18	0	2	0	0
Mvmt Flow	62	20	2	226	11	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	85	0	305	75
Stage 1	-	-	-	-	75	-
Stage 2	-	-	-	-	230	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1524	-	691	992
Stage 1	-	-	-	-	953	-
Stage 2	-	-	-	-	813	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1520	-	688	989
Mov Cap-2 Maneuver	-	-	-	-	688	-
Stage 1	-	-	-	-	950	-
Stage 2	-	-	-	-	811	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		10.3	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	688	-	-	1520	-	
HCM Lane V/C Ratio	0.016	-	-	0.001	-	
HCM Control Delay (s)	10.3	-	-	7.4	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	




HCM 6th TWSC
21: Red Gate Lane & Strong Street

No Build
AM Peak

Intersection						
Int Delay, s/veh	1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	53	5	13	192	10	8
Future Vol, veh/h	53	5	13	192	10	8
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	0	0	0	11	0
Mvmt Flow	58	5	14	209	11	9
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	64	0	299	62
Stage 1	-	-	-	-	62	-
Stage 2	-	-	-	-	237	-
Critical Hdwy	-	-	4.1	-	6.51	6.2
Critical Hdwy Stg 1	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	5.51	-
Follow-up Hdwy	-	-	2.2	-	3.599	3.3
Pot Cap-1 Maneuver	-	-	1551	-	674	1009
Stage 1	-	-	-	-	938	-
Stage 2	-	-	-	-	782	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1550	-	667	1008
Mov Cap-2 Maneuver	-	-	-	-	667	-
Stage 1	-	-	-	-	937	-
Stage 2	-	-	-	-	774	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.5		9.7	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	785	-	-	1550	-	
HCM Lane V/C Ratio	0.025	-	-	0.009	-	
HCM Control Delay (s)	9.7	-	-	7.3	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	




HCM 6th TWSC
26: East Pleasant Street & Clark Hill Road

No Build
AM Peak

Intersection						
Int Delay, s/veh	1.3					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	22	77	275	394	20
Future Vol, veh/h	6	22	77	275	394	20
Conflicting Peds, #/hr	0	6	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	20	19	4	6	6	5
Mvmt Flow	7	24	84	299	428	22
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	911	450	455	0	-	0
Stage 1	444	-	-	-	-	-
Stage 2	467	-	-	-	-	-
Critical Hdwy	6.6	6.39	4.14	-	-	-
Critical Hdwy Stg 1	5.6	-	-	-	-	-
Critical Hdwy Stg 2	5.6	-	-	-	-	-
Follow-up Hdwy	3.68	3.471	2.236	-	-	-
Pot Cap-1 Maneuver	283	575	1095	-	-	-
Stage 1	610	-	-	-	-	-
Stage 2	595	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	254	569	1090	-	-	-
Mov Cap-2 Maneuver	254	-	-	-	-	-
Stage 1	551	-	-	-	-	-
Stage 2	592	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.6	1.9		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1090	-	450	-	-	
HCM Lane V/C Ratio	0.077	-	0.068	-	-	
HCM Control Delay (s)	8.6	0	13.6	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.2	-	-	




HCM 6th TWSC
32: South East Street & Belchertwon Road

No Build
AM Peak

Intersection						
Int Delay, s/veh	7.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	458	190	0	0	374
Future Vol, veh/h	6	458	190	0	0	374
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	3	8	0	0	5
Mvmt Flow	7	498	207	0	0	407
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	614	207	0	-	-	-
Stage 1	207	-	-	-	-	-
Stage 2	407	-	-	-	-	-
Critical Hdwy	6.4	6.23	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	-	-	-	-
Pot Cap-1 Maneuver	459	831	-	0	0	-
Stage 1	832	-	-	0	0	-
Stage 2	676	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	459	831	-	-	-	-
Mov Cap-2 Maneuver	459	-	-	-	-	-
Stage 1	832	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	16.1	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 822		-			
HCM Lane V/C Ratio	- 0.614		-			
HCM Control Delay (s)	- 16.1		-			
HCM Lane LOS	- C		-			
HCM 95th %tile Q(veh)	- 4.3		-			

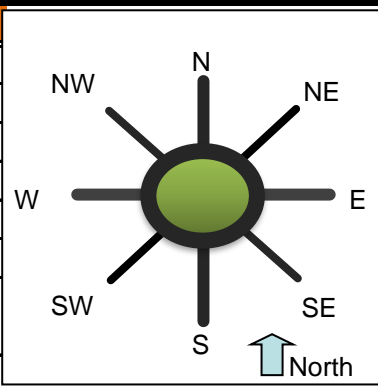
HCM 6th TWSC
33: Wildwood Driveway & Strong Street

No Build
AM Peak

Intersection						
Int Delay, s/veh	3.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	46	131	54	149	80	23
Future Vol, veh/h	46	131	54	149	80	23
Conflicting Peds, #/hr	0	7	7	0	0	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	5	2	0	10	5
Mvmt Flow	50	142	59	162	87	25
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	199	0	408	131
Stage 1	-	-	-	-	128	-
Stage 2	-	-	-	-	280	-
Critical Hdwy	-	-	4.12	-	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.218	-	3.59	3.345
Pot Cap-1 Maneuver	-	-	1373	-	584	911
Stage 1	-	-	-	-	878	-
Stage 2	-	-	-	-	749	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1364	-	552	902
Mov Cap-2 Maneuver	-	-	-	-	552	-
Stage 1	-	-	-	-	872	-
Stage 2	-	-	-	-	713	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2.1		12.3	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	604	-	-	1364	-	
HCM Lane V/C Ratio	0.185	-	-	0.043	-	
HCM Control Delay (s)	12.3	-	-	7.8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.7	-	-	0.1	-	

General & Site Information v 4.2

Analyst: Eric Beaudry
Agency/Co: Pare Corporation
Date: 4/26/2022
Project or PI#: 21245.00 Amherst Elementary Schools
Year, Peak Hour: 2029 No-Build AM
County/District: Amherst, MA
Intersection Name: East Pleasant Street at Triangle Street



Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			54		171		38	
	NE (2), vph								
	E (3), vph	44				25		122	
	SE (4), vph								
	S (5), vph	185		54				124	
	SW (6), vph								
	W (7), vph	48		303		155			
	NW (8), vph								
Output	Total Vehicles	277	0	411	0	351	0	284	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	96.0%	100.0%	99.0%	100.0%	92.0%	100.0%	93.0%	100.0%
% Heavy Vehicles	4.0%	0.0%	1.0%	0.0%	8.0%	0.0%	7.0%	0.0%
% Bicycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.92	0.95	0.92	0.95	0.92	0.95	0.92	0.95
F _{HV}	0.962	1.000	0.990	1.000	0.926	1.000	0.935	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	59	0	201	0	44	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	50	0	0	0	29	0	142	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	209	0	59	0	0	0	144	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	54	0	333	0	182	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	313	0	451	0	412	0	330	0
Conflicting flow, pcu/h	574	0	427	0	236	0	318	0

Results: Approach Measures of Effectiveness

HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	739	NA	884	NA	1005	NA	932	NA
Entry Flow Rates, vph	301	0	447	0	382	0	309	0
V/C ratio	0.41		0.51		0.38		0.33	
Control Delay, sec/pcu	10.2		10.7		7.7		7.4	
LOS	B		B		A		A	
Average Queue (ft)	21		33		20		16	
95th % Queue (ft)	52		73		48		39	









Overall Intersection Measures of Effectiveness

Int Control Delay (sec)	9.1	Int LOS	A	Max Approach V/C	0.51
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Notes: v 4.2

Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

Build Scenario 1
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	97	90	87	314	64	262	266	55	32	191	57
Future Volume (vph)	19	97	90	87	314	64	262	266	55	32	191	57
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	100		0	0		0
Storage Lanes	0		1	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	0.97		0.99			0.99			1.00	
Frt			0.850		0.981			0.974			0.973	
Flt Protected		0.992			0.991		0.950				0.994	
Satd. Flow (prot)	0	1839	1524	0	1790	0	1736	1791	0	0	1779	0
Flt Permitted		0.894			0.909		0.463				0.888	
Satd. Flow (perm)	0	1656	1477	0	1640	0	846	1791	0	0	1587	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			98		11			14			17	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2205			457			209			3887	
Travel Time (s)		50.1			10.4			4.8			88.3	
Confl. Peds. (#/hr)	10		7	7		10			11	11		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	6%	2%	3%	2%	4%	2%	6%	4%	3%	4%
Adj. Flow (vph)	21	105	98	95	341	70	285	289	60	35	208	62
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	126	98	0	506	0	285	349	0	0	305	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0		11.0	11.0		11.0	11.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0		29.0	29.0		29.0	29.0	
Total Split (%)	39.7%	39.7%	39.7%	39.7%	39.7%		37.2%	37.2%		37.2%	37.2%	
Maximum Green (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		25.1	25.1		25.1		24.0	24.0			24.0	
Actuated g/C Ratio		0.33	0.33		0.33		0.31	0.31			0.31	
v/c Ratio		0.23	0.18		0.94		1.08	0.62			0.60	













Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

Build Scenario 1
AM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	23%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effect Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings 5: South East Street/North East Street & Main Street

Build Scenario 1
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		20.3	5.3		52.4		109.7	27.5			27.5	
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	
Total Delay		20.3	5.3		52.4		109.7	27.5			27.5	
LOS		C	A		D		F	C			C	
Approach Delay		13.7			52.4			64.5			27.5	
Approach LOS		B			D			E			C	
Queue Length 50th (ft)		44	0		228		~159	138			118	
Queue Length 95th (ft)		84	31		#415		#305	225			200	
Internal Link Dist (ft)		2125			377			129			3807	
Turn Bay Length (ft)			200				100					
Base Capacity (vph)		559	563		560		263	567			506	
Starvation Cap Reductn		0	0		0		0	0			0	
Spillback Cap Reductn		0	0		0		0	0			0	
Storage Cap Reductn		0	0		0		0	0			0	
Reduced v/c Ratio		0.23	0.17		0.90		1.08	0.62			0.60	

Intersection Summary

Area Type: Other

Cycle Length: 78

Actuated Cycle Length: 77.1

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.08

Intersection Signal Delay: 47.2

Intersection LOS: D

Intersection Capacity Utilization 77.4%

ICU Level of Service D

Analysis Period (min) 15






~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: South East Street/North East Street & Main Street

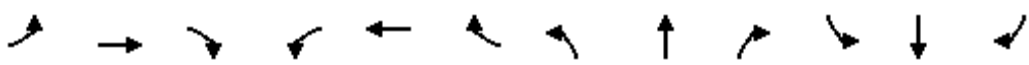
 Ø2	 Ø4	 Ø9
31 s	29 s	18 s
 Ø6	 Ø8	
31 s	29 s	

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
11: Dickinson Street/Triangle Street & Main Street

Build Scenario 1

AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕	↕		↕			↕	
Traffic Volume (vph)	37	132	4	8	235	382	7	63	10	101	14	8
Future Volume (vph)	37	132	4	8	235	382	7	63	10	101	14	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.997				0.850		0.983			0.991	
Flt Protected		0.989			0.998			0.995			0.961	
Satd. Flow (prot)	0	1781	0	0	1860	1615	0	1823	0	0	1790	0
Flt Permitted		0.706			0.987			0.963			0.395	
Satd. Flow (perm)	0	1271	0	0	1839	1615	0	1763	0	0	734	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				415		4			3	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		642			1170			794			2730	
Travel Time (s)		14.6			26.6			18.0			62.0	
Confl. Peds. (#/hr)			10	10			3		3	3		3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	5%	0%	0%	2%	0%	0%	2%	0%	0%	0%	14%
Adj. Flow (vph)	40	143	4	9	255	415	8	68	11	110	15	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	187	0	0	264	415	0	87	0	0	134	0
Turn Type	Perm	NA		Perm	NA	custom	Perm	NA		Perm	NA	
Protected Phases		2			6	7		8			4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	7	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	16.0	16.0		16.0	16.0	14.0	14.0	14.0		14.0	14.0	
Total Split (s)	66.0	66.0		66.0	66.0	36.0	31.0	31.0		66.0	66.0	
Total Split (%)	40.5%	40.5%		40.5%	40.5%	22.1%	19.0%	19.0%		40.5%	40.5%	
Maximum Green (s)	60.0	60.0		60.0	60.0	30.0	25.0	25.0		60.0	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0			6.0	6.0		6.0			6.0	
Lead/Lag						Lead	Lag	Lag				
Lead-Lag Optimize?						Yes	Yes	Yes				
Vehicle Extension (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		20.3			20.3	36.2		15.3			27.5	
Actuated g/C Ratio		0.22			0.22	0.40		0.17			0.30	
v/c Ratio		0.66			0.65	0.47		0.29			0.60	













Lanes, Volumes, Timings
11: Dickinson Street/Triangle Street & Main Street

Build Scenario 1
AM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	18%
Maximum Green (s)	28.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	10.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings
11: Dickinson Street/Triangle Street & Main Street

Build Scenario 1
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		46.3			41.9	4.3		35.3			39.0	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		46.3			41.9	4.3		35.3			39.0	
LOS		D			D	A		D			D	
Approach Delay		46.3			18.9			35.3			39.0	
Approach LOS		D			B			D			D	
Queue Length 50th (ft)		94			133	0		42			62	
Queue Length 95th (ft)		206			267	64		93			139	
Internal Link Dist (ft)		562			1090			714			2650	
Turn Bay Length (ft)						250						
Base Capacity (vph)		867			1254	1172		528			509	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.22			0.21	0.35		0.16			0.26	

Intersection Summary

Area Type: Other

Cycle Length: 163

Actuated Cycle Length: 91.4

Natural Cycle: 75

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.66

Intersection Signal Delay: 27.4

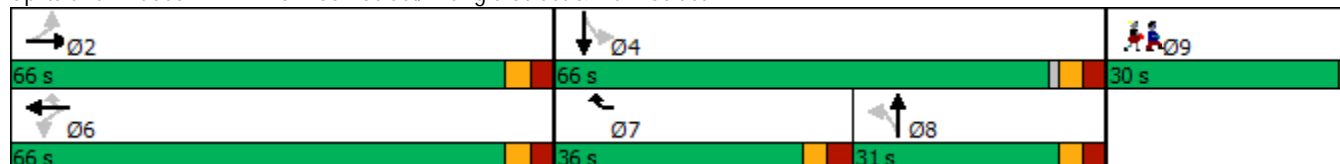
Intersection LOS: C

Intersection Capacity Utilization 54.6%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 11: Dickinson Street/Triangle Street & Main Street























Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
28: South East Street & College Street

Build Scenario 1

AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	64	152	17	9	306	3	106	125	8	193	119	79
Future Volume (vph)	64	152	17	9	306	3	106	125	8	193	119	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	100		0	150		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			1.00				0.99	
Frt		0.985			0.999			0.991			0.940	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1772	0	1805	1898	0	1787	1751	0	1752	1691	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1772	0	1800	1898	0	1778	1751	0	1752	1691	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3						2			16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		879			332			445			264	
Travel Time (s)		20.0			7.5			10.1			6.0	
Confl. Peds. (#/hr)			1	1			2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	6%	0%	0%	0%	0%	1%	8%	0%	3%	5%	4%
Adj. Flow (vph)	70	165	18	10	333	3	115	136	9	210	129	86
Shared Lane Traffic (%)												
Lane Group Flow (vph)	70	183	0	10	336	0	115	145	0	210	215	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		10.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	12.0		15.0	12.0		11.0	12.0		11.0	12.0	
Total Split (s)	35.0	56.0		35.0	56.0		35.0	56.0		35.0	56.0	
Total Split (%)	17.5%	28.0%		17.5%	28.0%		17.5%	28.0%		17.5%	28.0%	
Maximum Green (s)	30.0	50.0		30.0	50.0		30.0	50.0		30.0	50.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	9.9	35.8		10.6	26.3		13.0	15.2		20.4	22.7	
Actuated g/C Ratio	0.09	0.32		0.10	0.24		0.12	0.14		0.18	0.20	
v/c Ratio	0.45	0.32		0.06	0.75		0.55	0.60		0.65	0.60	













Lanes, Volumes, Timings
28: South East Street & College Street

Build Scenario 1
AM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	9%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	6.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings
28: South East Street & College Street

Build Scenario 1
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	64.0	31.4		58.9	52.6		61.9	59.5		55.6	47.4	
Queue Delay	0.0	0.0		0.0	0.2		0.0	0.0		0.0	0.0	
Total Delay	64.0	31.4		58.9	52.8		61.9	59.5		55.6	47.4	
LOS	E	C		E	D		E	E		E	D	
Approach Delay		40.4			53.0			60.5			51.5	
Approach LOS		D			D			E			D	
Queue Length 50th (ft)	48	90		7	224		79	98		141	130	
Queue Length 95th (ft)	117	207		30	403		171	204		275	260	
Internal Link Dist (ft)		799			252			365			184	
Turn Bay Length (ft)	250			100			150			200		
Base Capacity (vph)	508	848		518	907		512	838		502	817	
Starvation Cap Reductn	0	0		0	133		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.14	0.22		0.02	0.43		0.22	0.17		0.42	0.26	

Intersection Summary

Area Type: Other

Cycle Length: 200

Actuated Cycle Length: 110.8

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 51.5










Intersection LOS: D

Intersection Capacity Utilization 57.4%

ICU Level of Service B

Analysis Period (min) 15




Splits and Phases: 28: South East Street & College Street

 Ø1	 Ø2	 Ø3	 Ø4	 Ø9
35 s	56 s	35 s	56 s	18 s
 Ø5	 Ø6	 Ø7	 Ø8	
35 s	56 s	35 s	56 s	

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

HCM 6th TWSC
1: East Pleasant Street & Strong Street




Build Scenario 1
AM Peak

Intersection						
Int Delay, s/veh	10.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	119	209	161	142	107	323
Future Vol, veh/h	119	209	161	142	107	323
Conflicting Peds, #/hr	8	1	0	9	9	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	2	4	4	7	5
Mvmt Flow	129	227	175	154	116	351
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	852	262	0	0	338	0
Stage 1	261	-	-	-	-	-
Stage 2	591	-	-	-	-	-
Critical Hdwy	6.45	6.22	-	-	4.17	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.318	-	-	2.263	-
Pot Cap-1 Maneuver	326	777	-	-	1194	-
Stage 1	776	-	-	-	-	-
Stage 2	547	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	281	770	-	-	1184	-
Mov Cap-2 Maneuver	281	-	-	-	-	-
Stage 1	769	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	32.6	0	2.1			
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	472	1184	-	
HCM Lane V/C Ratio	-	-	0.755	0.098	-	
HCM Control Delay (s)	-	-	32.6	8.4	0	
HCM Lane LOS	-	-	D	A	A	
HCM 95th %tile Q(veh)	-	-	6.4	0.3	-	

HCM 6th TWSC

2: North East Street & Strong Street

Build Scenario 1
AM Peak




Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	69	144	170	166	34
Future Vol, veh/h	14	69	144	170	166	34
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	11	2	0	3	3	0
Mvmt Flow	15	75	157	185	180	37
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	698	199	217	0	-	0
Stage 1	199	-	-	-	-	-
Stage 2	499	-	-	-	-	-
Critical Hdwy	6.51	6.22	4.1	-	-	-
Critical Hdwy Stg 1	5.51	-	-	-	-	-
Critical Hdwy Stg 2	5.51	-	-	-	-	-
Follow-up Hdwy	3.599	3.318	2.2	-	-	-
Pot Cap-1 Maneuver	393	842	1365	-	-	-
Stage 1	813	-	-	-	-	-
Stage 2	592	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	343	842	1365	-	-	-
Mov Cap-2 Maneuver	343	-	-	-	-	-
Stage 1	709	-	-	-	-	-
Stage 2	592	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	11.1	3.7		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1365	-	676	-	-	
HCM Lane V/C Ratio	0.115	-	0.133	-	-	
HCM Control Delay (s)	8	0	11.1	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.4	-	0.5	-	-	




Intersection												
Int Delay, s/veh	2.9											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	205	14	27	633	8	52	10	26	5	5	10
Future Vol, veh/h	4	205	14	27	633	8	52	10	26	5	5	10
Conflicting Peds, #/hr	18	0	5	5	0	18	3	0	1	1	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	3	0	0	4	0	0	0	12	0	0	0
Mvmt Flow	4	223	15	29	688	9	57	11	28	5	5	11
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	715	0	0	243	0	0	1006	1017	237	1028	1020	714
Stage 1	-	-	-	-	-	-	244	244	-	769	769	-
Stage 2	-	-	-	-	-	-	762	773	-	259	251	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.32	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.408	3.5	4	3.3
Pot Cap-1 Maneuver	895	-	-	1335	-	-	222	239	778	214	239	435
Stage 1	-	-	-	-	-	-	764	708	-	397	413	-
Stage 2	-	-	-	-	-	-	400	412	-	750	703	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	880	-	-	1329	-	-	204	224	774	189	224	426
Mov Cap-2 Maneuver	-	-	-	-	-	-	204	224	-	189	224	-
Stage 1	-	-	-	-	-	-	756	701	-	388	392	-
Stage 2	-	-	-	-	-	-	369	391	-	707	696	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.3			26.2			19.1		
HCM LOS							D			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	264	880	-	-	1329	-	-	277				
HCM Lane V/C Ratio	0.362	0.005	-	-	0.022	-	-	0.078				
HCM Control Delay (s)	26.2	9.1	0	-	7.8	0	-	19.1				
HCM Lane LOS	D	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	1.6	0	-	-	0.1	-	-	0.3				

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Vol, veh/h	2	2	7	0	0	0	0	565	81	48	370	0
Future Vol, veh/h	2	2	7	0	0	0	0	565	81	48	370	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	17	2	2	2	0	3	8	9	4	0
Mvmt Flow	2	2	8	0	0	0	0	614	88	52	402	0
Major/Minor	Minor2			Major1			Major2					
Conflicting Flow All	1165	1210	402				-	0	0	704	0	0
Stage 1	506	506	-				-	-	-	-	-	-
Stage 2	659	704	-				-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.37				-	-	-	4.19	-	-
Critical Hdwy Stg 1	5.4	5.5	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-				-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.453				-	-	-	2.281	-	-
Pot Cap-1 Maneuver	217	184	617				0	-	-	862	-	0
Stage 1	610	543	-				0	-	-	-	-	0
Stage 2	518	443	-				0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	200	0	617				-	-	-	862	-	-
Mov Cap-2 Maneuver	200	0	-				-	-	-	-	-	-
Stage 1	610	0	-				-	-	-	-	-	-
Stage 2	478	0	-				-	-	-	-	-	-
Approach	EB			NB			SB					
HCM Control Delay, s	13.8			0			1.1					
HCM LOS	B											
Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT							
Capacity (veh/h)	-	-	422	862	-							
HCM Lane V/C Ratio	-	-	0.028	0.061	-							
HCM Control Delay (s)	-	-	13.8	9.4	0							
HCM Lane LOS	-	-	B	A	A							
HCM 95th %tile Q(veh)	-	-	0.1	0.2	-							

HCM 6th TWSC
17: South East Street & Fort River Exit




Build Scenario 1
AM Peak

Intersection						
Int Delay, s/veh	2.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	58	54	568	0	0	369
Future Vol, veh/h	58	54	568	0	0	369
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	8	4	0	2	4
Mvmt Flow	63	59	617	0	0	401
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1018	617	0	-	-	-
Stage 1	617	-	-	-	-	-
Stage 2	401	-	-	-	-	-
Critical Hdwy	6.49	6.28	-	-	-	-
Critical Hdwy Stg 1	5.49	-	-	-	-	-
Critical Hdwy Stg 2	5.49	-	-	-	-	-
Follow-up Hdwy	3.581	3.372	-	-	-	-
Pot Cap-1 Maneuver	255	479	-	0	0	-
Stage 1	525	-	-	0	0	-
Stage 2	661	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	255	479	-	-	-	-
Mov Cap-2 Maneuver	255	-	-	-	-	-
Stage 1	525	-	-	-	-	-
Stage 2	661	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	22.2	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	-		329			
HCM Lane V/C Ratio	-		0.37			
HCM Control Delay (s)	-		22.2			
HCM Lane LOS	-		C			
HCM 95th %tile Q(veh)	-		1.7			

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	79	18	2	228	10	0
Future Vol, veh/h	79	18	2	228	10	0
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	18	0	2	0	0
Mvmt Flow	86	20	2	248	11	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	109	0	351	99
Stage 1	-	-	-	-	99	-
Stage 2	-	-	-	-	252	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1494	-	650	962
Stage 1	-	-	-	-	930	-
Stage 2	-	-	-	-	795	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1490	-	647	959
Mov Cap-2 Maneuver	-	-	-	-	647	-
Stage 1	-	-	-	-	927	-
Stage 2	-	-	-	-	793	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		10.7	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	647	-	-	1490	-	
HCM Lane V/C Ratio	0.017	-	-	0.001	-	
HCM Control Delay (s)	10.7	-	-	7.4	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	




HCM 6th TWSC
21: Red Gate Lane & Strong Street

Build Scenario 1
AM Peak

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	75	5	13	212	10	8
Future Vol, veh/h	75	5	13	212	10	8
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	0	0	0	11	0
Mvmt Flow	82	5	14	230	11	9
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	88	0	344	86
Stage 1	-	-	-	-	86	-
Stage 2	-	-	-	-	258	-
Critical Hdwy	-	-	4.1	-	6.51	6.2
Critical Hdwy Stg 1	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	5.51	-
Follow-up Hdwy	-	-	2.2	-	3.599	3.3
Pot Cap-1 Maneuver	-	-	1520	-	635	978
Stage 1	-	-	-	-	915	-
Stage 2	-	-	-	-	765	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1519	-	627	977
Mov Cap-2 Maneuver	-	-	-	-	627	-
Stage 1	-	-	-	-	914	-
Stage 2	-	-	-	-	757	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.4		10	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	746	-	-	1519	-	
HCM Lane V/C Ratio	0.026	-	-	0.009	-	
HCM Control Delay (s)	10	-	-	7.4	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	




HCM 6th TWSC
26: East Pleasant Street & Clark Hill Road

Build Scenario 1
AM Peak

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	22	77	332	405	20
Future Vol, veh/h	6	22	77	332	405	20
Conflicting Peds, #/hr	0	6	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	20	19	4	6	6	5
Mvmt Flow	7	24	84	361	440	22
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	985	462	467	0	-	0
Stage 1	456	-	-	-	-	-
Stage 2	529	-	-	-	-	-
Critical Hdwy	6.6	6.39	4.14	-	-	-
Critical Hdwy Stg 1	5.6	-	-	-	-	-
Critical Hdwy Stg 2	5.6	-	-	-	-	-
Follow-up Hdwy	3.68	3.471	2.236	-	-	-
Pot Cap-1 Maneuver	255	566	1084	-	-	-
Stage 1	602	-	-	-	-	-
Stage 2	556	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	228	560	1079	-	-	-
Mov Cap-2 Maneuver	228	-	-	-	-	-
Stage 1	541	-	-	-	-	-
Stage 2	553	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14.1	1.6		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1079	-	427	-	-	
HCM Lane V/C Ratio	0.078	-	0.071	-	-	
HCM Control Delay (s)	8.6	0	14.1	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.3	-	0.2	-	-	




HCM 6th TWSC
32: South East Street & Belchertwon Road

Build Scenario 1
AM Peak

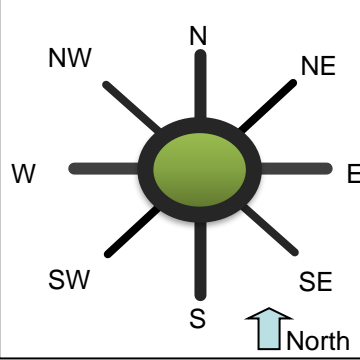
Intersection						
Int Delay, s/veh	7.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	458	190	0	0	374
Future Vol, veh/h	6	458	190	0	0	374
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	3	8	0	0	5
Mvmt Flow	7	498	207	0	0	407
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	614	207	0	-	-	-
Stage 1	207	-	-	-	-	-
Stage 2	407	-	-	-	-	-
Critical Hdwy	6.4	6.23	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	-	-	-	-
Pot Cap-1 Maneuver	459	831	-	0	0	-
Stage 1	832	-	-	0	0	-
Stage 2	676	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	459	831	-	-	-	-
Mov Cap-2 Maneuver	459	-	-	-	-	-
Stage 1	832	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	16.1	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 822		-			
HCM Lane V/C Ratio	- 0.614		-			
HCM Control Delay (s)	- 16.1		-			
HCM Lane LOS	- C		-			
HCM 95th %tile Q(veh)	- 4.3		-			

HCM 6th TWSC
33: Wildwood Driveway & Strong Street

Build Scenario 1
AM Peak

Intersection						
Int Delay, s/veh	5.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	46	224	54	169	156	45
Future Vol, veh/h	46	224	54	169	156	45
Conflicting Peds, #/hr	0	7	7	0	0	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	5	2	0	10	5
Mvmt Flow	50	243	59	184	170	49
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	300	0	481	182
Stage 1	-	-	-	-	179	-
Stage 2	-	-	-	-	302	-
Critical Hdwy	-	-	4.12	-	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.218	-	3.59	3.345
Pot Cap-1 Maneuver	-	-	1261	-	530	853
Stage 1	-	-	-	-	833	-
Stage 2	-	-	-	-	732	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1253	-	499	845
Mov Cap-2 Maneuver	-	-	-	-	499	-
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	694	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.9		15.8	
HCM LOS	C					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	549	-	-	1253	-	
HCM Lane V/C Ratio	0.398	-	-	0.047	-	
HCM Control Delay (s)	15.8	-	-	8	0	
HCM Lane LOS	C	-	-	A	A	
HCM 95th %tile Q(veh)	1.9	-	-	0.1	-	

General & Site Information v 4.2								
Analyst:		Eric Beaudry						
Agency/Co:		Pare Corporation						
Date:		4/28/2022						
Project or PI#:		21245.00 Amherst Elementary Schools						
Year, Peak Hour:		2029 Build Scenario 1 AM						
County/District:		Amherst, MA						
Intersection Name:		East Pleasant Street at Triangle Street						



Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			73		234		38	
	NE (2), vph								
	E (3), vph	47				25		122	
	SE (4), vph								
	S (5), vph	198		54				124	
	SW (6), vph								
	W (7), vph	51		303		155			
	NW (8), vph								
Output	Total Vehicles	296	0	430	0	414	0	284	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	96.0%	100.0%	99.0%	100.0%	92.0%	100.0%	93.0%	100.0%
% Heavy Vehicles	4.0%	0.0%	1.0%	0.0%	8.0%	0.0%	7.0%	0.0%
% Bicycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.92	0.95	0.92	0.95	0.92	0.95	0.92	0.95
F _{HV}	0.962	1.000	0.990	1.000	0.926	1.000	0.935	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	80	0	275	0	44	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	53	0	0	0	29	0	142	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	224	0	59	0	0	0	144	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	58	0	333	0	182	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	335	0	472	0	486	0	330	0
Conflicting flow, pcu/h	574	0	501	0	239	0	336	0

Results: Approach Measures of Effectiveness

HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	739	NA	820	NA	1001	NA	915	NA
Entry Flow Rates, vph	322	0	467	0	450	0	309	0
V/C ratio	0.44		0.57		0.45		0.34	
Control Delay, sec/pcu	10.8		12.9		8.7		7.6	
LOS	B		B		A		A	
Average Queue (ft)	24		42		27		16	
95th % Queue (ft)	58		93		64		40	

Overall Intersection Measures of Effectiveness

Int Control Delay (sec)	10.2	Int LOS	B	Max Approach V/C	0.57
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














Notes: v 4.2

Lanes, Volumes, Timings

5: South East Street/North East Street & Main Street

Build Scenario 2

AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	95	119	87	295	64	281	285	60	29	260	50
Future Volume (vph)	19	95	119	87	295	64	281	285	60	29	260	50
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	100		0	0		0
Storage Lanes	0		1	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	0.97		0.99			0.99			1.00	
Frt			0.850		0.981			0.974			0.980	
Flt Protected		0.992			0.990		0.950				0.996	
Satd. Flow (prot)	0	1839	1524	0	1788	0	1736	1790	0	0	1796	0
Flt Permitted		0.897			0.906		0.396				0.880	
Satd. Flow (perm)	0	1661	1477	0	1634	0	723	1790	0	0	1586	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			129		12			14			11	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2205			457			209			3887	
Travel Time (s)		50.1			10.4			4.8			88.3	
Confl. Peds. (#/hr)	10		7	7		10			11	11		
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	3%	6%	2%	3%	2%	4%	2%	6%	4%	3%	4%
Adj. Flow (vph)	21	103	129	95	321	70	305	310	65	32	283	54
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	124	129	0	486	0	305	375	0	0	369	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0		11.0	11.0		11.0	11.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0		29.0	29.0		29.0	29.0	
Total Split (%)	39.7%	39.7%	39.7%	39.7%	39.7%		37.2%	37.2%		37.2%	37.2%	
Maximum Green (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		24.6	24.6		24.6		24.0	24.0			24.0	
Actuated g/C Ratio		0.32	0.32		0.32		0.31	0.31			0.31	
v/c Ratio		0.23	0.23		0.91		1.35	0.66			0.73	

Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

Build Scenario 2













AM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	23%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

Build Scenario 2

AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		20.3	5.0		48.6		210.9	28.8			33.6	
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	
Total Delay		20.3	5.0		48.6		210.9	28.8			33.6	
LOS		C	A		D		F	C			C	
Approach Delay		12.5			48.6			110.5			33.6	
Approach LOS		B			D			F			C	
Queue Length 50th (ft)		43	0		215		~199	151			155	
Queue Length 95th (ft)		82	35		#392		#348	245			#283	
Internal Link Dist (ft)		2125			377			129			3807	
Turn Bay Length (ft)			200				100					
Base Capacity (vph)		563	586		562		226	570			504	
Starvation Cap Reductn		0	0		0		0	0			0	
Spillback Cap Reductn		0	0		0		0	0			0	
Storage Cap Reductn		0	0		0		0	0			0	
Reduced v/c Ratio		0.22	0.22		0.86		1.35	0.66			0.73	

Intersection Summary

Area Type: Other

Cycle Length: 78

Actuated Cycle Length: 76.7

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.35

Intersection Signal Delay: 63.9

Intersection LOS: E

Intersection Capacity Utilization 80.7%

ICU Level of Service D

Analysis Period (min) 15






~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: South East Street/North East Street & Main Street


















 Ø2	 Ø4	 Ø9
31 s	29 s	18 s
 Ø6	 Ø8	
31 s	29 s	

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
11: Dickinson Street/Triangle Street & Main Street

Build Scenario 2

AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	37	157	4	8	230	375	7	63	10	123	14	8
Future Volume (vph)	37	157	4	8	230	375	7	63	10	123	14	8
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00			1.00			1.00			1.00	
Frt		0.997				0.850		0.983			0.992	
Flt Protected		0.991			0.998			0.995			0.959	
Satd. Flow (prot)	0	1785	0	0	1860	1615	0	1823	0	0	1791	0
Flt Permitted		0.685			0.986			0.967			0.427	
Satd. Flow (perm)	0	1234	0	0	1837	1615	0	1770	0	0	796	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				408		4			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		642			1170			794			2730	
Travel Time (s)		14.6			26.6			18.0			62.0	
Confl. Peds. (#/hr)			10	10			3		3	3		3
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	5%	0%	0%	2%	0%	0%	2%	0%	0%	0%	14%
Adj. Flow (vph)	40	171	4	9	250	408	8	68	11	134	15	9
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	215	0	0	259	408	0	87	0	0	158	0
Turn Type	Perm	NA		Perm	NA	custom	Perm	NA		Perm	NA	
Protected Phases		2			6	7		8			4	
Permitted Phases	2			6		6	8			4		
Detector Phase	2	2		6	6	7	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	16.0	16.0		16.0	16.0	14.0	14.0	14.0		14.0	14.0	
Total Split (s)	66.0	66.0		66.0	66.0	36.0	31.0	31.0		66.0	66.0	
Total Split (%)	40.5%	40.5%		40.5%	40.5%	22.1%	19.0%	19.0%		40.5%	40.5%	
Maximum Green (s)	60.0	60.0		60.0	60.0	30.0	25.0	25.0		60.0	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0			6.0	6.0		6.0			6.0	
Lead/Lag						Lead	Lag	Lag				
Lead-Lag Optimize?						Yes	Yes	Yes				
Vehicle Extension (s)	3.5	3.5		3.5	3.5	3.5	3.5	3.5		3.5	3.5	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		21.2			21.2	38.5		21.2			34.6	
Actuated g/C Ratio		0.21			0.21	0.39		0.21			0.35	
v/c Ratio		0.82			0.66	0.47		0.23			0.57	













Lanes, Volumes, Timings
11: Dickinson Street/Triangle Street & Main Street

Build Scenario 2
AM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	18%
Maximum Green (s)	28.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	10.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	0
Act Effect Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings
11: Dickinson Street/Triangle Street & Main Street

Build Scenario 2
AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		64.0			46.9	4.7		31.8			34.6	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		64.0			46.9	4.7		31.8			34.6	
LOS		E			D	A		C			C	
Approach Delay		64.0			21.1			31.8			34.6	
Approach LOS		E			C			C			C	
Queue Length 50th (ft)		126			146	0		43			77	
Queue Length 95th (ft)		#286			291	72		90			158	
Internal Link Dist (ft)		562			1090			714			2650	
Turn Bay Length (ft)						250						
Base Capacity (vph)		776			1154	1120		533			509	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.28			0.22	0.36		0.16			0.31	

Intersection Summary

Area Type: Other

Cycle Length: 163

Actuated Cycle Length: 99.6

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.82

Intersection Signal Delay: 32.0

Intersection LOS: C

Intersection Capacity Utilization 55.5%

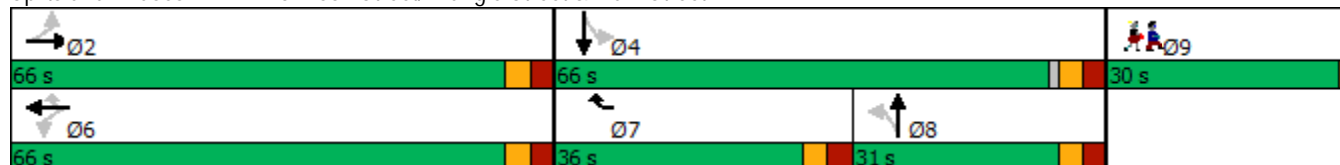
ICU Level of Service B

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 11: Dickinson Street/Triangle Street & Main Street























Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
28: South East Street & College Street

Build Scenario 2

AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	75	152	17	9	274	3	96	125	8	207	128	85
Future Volume (vph)	75	152	17	9	274	3	96	125	8	207	128	85
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	100		0	150		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00		1.00			1.00				0.99	
Frt		0.985			0.999			0.991			0.940	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1770	1772	0	1805	1898	0	1787	1751	0	1752	1691	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1770	1772	0	1800	1898	0	1778	1751	0	1752	1691	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		3						2			16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		879			332			445			264	
Travel Time (s)		20.0			7.5			10.1			6.0	
Confl. Peds. (#/hr)			1	1			2					2
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	2%	6%	0%	0%	0%	0%	1%	8%	0%	3%	5%	4%
Adj. Flow (vph)	82	165	18	10	298	3	104	136	9	225	139	92
Shared Lane Traffic (%)												
Lane Group Flow (vph)	82	183	0	10	301	0	104	145	0	225	231	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		10.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	12.0		15.0	12.0		11.0	12.0		11.0	12.0	
Total Split (s)	35.0	56.0		35.0	56.0		35.0	56.0		35.0	56.0	
Total Split (%)	17.5%	28.0%		17.5%	28.0%		17.5%	28.0%		17.5%	28.0%	
Maximum Green (s)	30.0	50.0		30.0	50.0		30.0	50.0		30.0	50.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	10.6	37.4		10.4	24.0		12.1	15.0		21.6	24.6	
Actuated g/C Ratio	0.09	0.33		0.09	0.21		0.11	0.13		0.19	0.22	
v/c Ratio	0.50	0.31		0.06	0.75		0.54	0.62		0.67	0.61	

Lanes, Volumes, Timings
28: South East Street & College Street













Build Scenario 2
AM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	9%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	6.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings
28: South East Street & College Street

Build Scenario 2

AM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	63.9	31.8		58.1	55.3		62.8	60.6		55.1	46.1	
Queue Delay	0.0	0.0		0.0	0.1		0.0	0.0		0.0	0.0	
Total Delay	63.9	31.8		58.1	55.4		62.8	60.6		55.1	46.1	
LOS	E	C		E	E		E	E		E	D	
Approach Delay		41.7			55.5			61.5			50.5	
Approach LOS		D			E			E			D	
Queue Length 50th (ft)	57	92		7	202		72	98		149	138	
Queue Length 95th (ft)	129	207		29	361		156	201		288	271	
Internal Link Dist (ft)		799			252			365			184	
Turn Bay Length (ft)	250			100			150			200		
Base Capacity (vph)	488	817		498	873		493	807		483	786	
Starvation Cap Reductn	0	0		0	104		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.17	0.22		0.02	0.39		0.21	0.18		0.47	0.29	

Intersection Summary

Area Type: Other

Cycle Length: 200

Actuated Cycle Length: 112.6

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 52.0










Intersection LOS: D

Intersection Capacity Utilization 56.5%

ICU Level of Service B

Analysis Period (min) 15




Splits and Phases: 28: South East Street & College Street

 Ø1	 Ø2	 Ø3	 Ø4	 Ø9
35 s	56 s	35 s	56 s	18 s
 Ø5	 Ø6	 Ø7	 Ø8	
35 s	56 s	35 s	56 s	

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

HCM 6th TWSC
1: East Pleasant Street & Strong Street




Build Scenario 2
AM Peak

Intersection						
Int Delay, s/veh	6.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	62	199	163	60	134	323
Future Vol, veh/h	62	199	163	60	134	323
Conflicting Peds, #/hr	8	1	0	9	9	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	2	4	4	7	5
Mvmt Flow	67	216	177	65	146	351
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	870	220	0	0	251	0
Stage 1	219	-	-	-	-	-
Stage 2	651	-	-	-	-	-
Critical Hdwy	6.45	6.22	-	-	4.17	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.318	-	-	2.263	-
Pot Cap-1 Maneuver	318	820	-	-	1286	-
Stage 1	810	-	-	-	-	-
Stage 2	513	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	268	812	-	-	1275	-
Mov Cap-2 Maneuver	268	-	-	-	-	-
Stage 1	803	-	-	-	-	-
Stage 2	437	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	18.4	0		2.4		
HCM LOS	C					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	548	1275	-
HCM Lane V/C Ratio		-	-	0.518	0.114	-
HCM Control Delay (s)		-	-	18.4	8.2	0
HCM Lane LOS		-	-	C	A	A
HCM 95th %tile Q(veh)		-	-	3	0.4	-





HCM 6th TWSC

2: North East Street & Strong Street

Build Scenario 2
AM Peak

Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	10	93	150	180	208	17
Future Vol, veh/h	10	93	150	180	208	17
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	11	2	0	3	3	0
Mvmt Flow	11	101	163	196	226	18
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	757	235	244	0	-	0
Stage 1	235	-	-	-	-	-
Stage 2	522	-	-	-	-	-
Critical Hdwy	6.51	6.22	4.1	-	-	-
Critical Hdwy Stg 1	5.51	-	-	-	-	-
Critical Hdwy Stg 2	5.51	-	-	-	-	-
Follow-up Hdwy	3.599	3.318	2.2	-	-	-
Pot Cap-1 Maneuver	363	804	1334	-	-	-
Stage 1	783	-	-	-	-	-
Stage 2	577	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	313	804	1334	-	-	-
Mov Cap-2 Maneuver	313	-	-	-	-	-
Stage 1	676	-	-	-	-	-
Stage 2	577	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	11.1	3.7		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1334	-	698	-	-	
HCM Lane V/C Ratio	0.122	-	0.16	-	-	
HCM Control Delay (s)	8.1	0	11.1	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.4	-	0.6	-	-	




Intersection												
Int Delay, s/veh	3.4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	4	252	14	27	623	8	50	10	26	14	13	10
Future Vol, veh/h	4	252	14	27	623	8	50	10	26	14	13	10
Conflicting Peds, #/hr	18	0	5	5	0	18	3	0	1	1	0	3
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	3	0	0	4	0	0	0	12	0	0	0
Mvmt Flow	4	274	15	29	677	9	54	11	28	15	14	11
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	704	0	0	294	0	0	1050	1057	288	1068	1060	703
Stage 1	-	-	-	-	-	-	295	295	-	758	758	-
Stage 2	-	-	-	-	-	-	755	762	-	310	302	-
Critical Hdwy	4.1	-	-	4.1	-	-	7.1	6.5	6.32	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.2	-	-	2.2	-	-	3.5	4	3.408	3.5	4	3.3
Pot Cap-1 Maneuver	903	-	-	1279	-	-	207	227	728	201	226	441
Stage 1	-	-	-	-	-	-	718	673	-	402	418	-
Stage 2	-	-	-	-	-	-	404	416	-	705	668	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	888	-	-	1273	-	-	184	213	724	176	212	432
Mov Cap-2 Maneuver	-	-	-	-	-	-	184	213	-	176	212	-
Stage 1	-	-	-	-	-	-	711	666	-	393	396	-
Stage 2	-	-	-	-	-	-	365	394	-	662	661	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.3			28.8			24.3		
HCM LOS							D			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	243	888	-	-	1273	-	-	226				
HCM Lane V/C Ratio	0.385	0.005	-	-	0.023	-	-	0.178				
HCM Control Delay (s)	28.8	9.1	0	-	7.9	0	-	24.3				
HCM Lane LOS	D	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	1.7	0	-	-	0.1	-	-	0.6				

Intersection												
Int Delay, s/veh	40											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	31	7	103	0	0	0	565	92	162	354	0
Future Vol, veh/h	2	31	7	103	0	0	0	565	92	162	354	0
Conflicting Peds, #/hr	1	0	0	0	0	1	0	0	2	2	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	17	2	2	2	0	3	8	9	4	0
Mvmt Flow	2	34	8	112	0	0	0	614	100	176	385	0
Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	1402	1453	385	1424	-	-	-	0	0	716	0	0
Stage 1	737	737	-	666	-	-	-	-	-	-	-	-
Stage 2	665	716	-	758	-	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.37	7.12	-	-	-	-	-	4.19	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.12	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.12	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.453	3.518	-	-	-	-	-	2.281	-	-
Pot Cap-1 Maneuver	119	132	631	113	0	0	0	-	-	853	-	0
Stage 1	413	428	-	449	0	0	0	-	-	-	-	0
Stage 2	453	437	-	399	0	0	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	95	97	631	~ 66	-	-	-	-	-	851	-	-
Mov Cap-2 Maneuver	95	97	-	~ 66	-	-	-	-	-	-	-	-
Stage 1	413	315	-	449	-	-	-	-	-	-	-	-
Stage 2	453	436	-	259	-	-	-	-	-	-	-	-
Approach	EB		WB		NB		SB					
HCM Control Delay, s	54.8		\$ 473.5		0		3.2					
HCM LOS	F		F									
Minor Lane/Major Mvmt	NBT		NBR EBLn1WBLn1		SBL		SBT					
Capacity (veh/h)	-		114 66		851		-					
HCM Lane V/C Ratio	-		0.381 1.696		0.207		-					
HCM Control Delay (s)	-		54.8\$ 473.5		10.3		0					
HCM Lane LOS	-		F F		B A							
HCM 95th %tile Q(veh)	-		1.6 10		0.8		-					
Notes												
~: Volume exceeds capacity		\$: Delay exceeds 300s			+: Computation Not Defined				*: All major volume in platoon			

HCM 6th TWSC
17: South East Street & Fort River Exit




Build Scenario 2
AM Peak

Intersection						
Int Delay, s/veh	1.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↖			↖
Traffic Vol, veh/h	0	96	568	0	0	437
Future Vol, veh/h	0	96	568	0	0	437
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	8	4	0	2	4
Mvmt Flow	0	104	617	0	0	475
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	617	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.28	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.372	-	-	-	-
Pot Cap-1 Maneuver	0	479	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	479	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	14.6	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 479		-			
HCM Lane V/C Ratio	- 0.218		-			
HCM Control Delay (s)	- 14.6		-			
HCM Lane LOS	- B		-			
HCM 95th %tile Q(veh)	- 0.8		-			

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	97	18	2	217	10	0
Future Vol, veh/h	97	18	2	217	10	0
Conflicting Peds, #/hr	0	3	3	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	9	18	0	2	0	0
Mvmt Flow	105	20	2	236	11	0
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	128	0	358	118
Stage 1	-	-	-	-	118	-
Stage 2	-	-	-	-	240	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1470	-	644	939
Stage 1	-	-	-	-	912	-
Stage 2	-	-	-	-	805	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1466	-	641	936
Mov Cap-2 Maneuver	-	-	-	-	641	-
Stage 1	-	-	-	-	909	-
Stage 2	-	-	-	-	803	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.1		10.7	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	641	-	-	1466	-	
HCM Lane V/C Ratio	0.017	-	-	0.001	-	
HCM Control Delay (s)	10.7	-	-	7.5	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	




HCM 6th TWSC
21: Red Gate Lane & Strong Street

Build Scenario 2
AM Peak

Intersection						
Int Delay, s/veh	0.9					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	93	5	13	201	10	8
Future Vol, veh/h	93	5	13	201	10	8
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	0	0	0	11	0
Mvmt Flow	101	5	14	218	11	9
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	107	0	351	105
Stage 1	-	-	-	-	105	-
Stage 2	-	-	-	-	246	-
Critical Hdwy	-	-	4.1	-	6.51	6.2
Critical Hdwy Stg 1	-	-	-	-	5.51	-
Critical Hdwy Stg 2	-	-	-	-	5.51	-
Follow-up Hdwy	-	-	2.2	-	3.599	3.3
Pot Cap-1 Maneuver	-	-	1497	-	629	955
Stage 1	-	-	-	-	897	-
Stage 2	-	-	-	-	774	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1496	-	621	954
Mov Cap-2 Maneuver	-	-	-	-	621	-
Stage 1	-	-	-	-	896	-
Stage 2	-	-	-	-	765	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.5		10	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	735	-	-	1496	-	
HCM Lane V/C Ratio	0.027	-	-	0.009	-	
HCM Control Delay (s)	10	-	-	7.4	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

HCM 6th TWSC
26: East Pleasant Street & Clark Hill Road

Build Scenario 2
AM Peak

Intersection						
Int Delay, s/veh	1.2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	6	22	77	286	432	20
Future Vol, veh/h	6	22	77	286	432	20
Conflicting Peds, #/hr	0	6	5	0	0	5
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	20	19	4	6	6	5
Mvmt Flow	7	24	84	311	470	22




Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	965	492	497	0	-	0
Stage 1	486	-	-	-	-	-
Stage 2	479	-	-	-	-	-
Critical Hdwy	6.6	6.39	4.14	-	-	-
Critical Hdwy Stg 1	5.6	-	-	-	-	-
Critical Hdwy Stg 2	5.6	-	-	-	-	-
Follow-up Hdwy	3.68	3.471	2.236	-	-	-
Pot Cap-1 Maneuver	262	544	1057	-	-	-
Stage 1	583	-	-	-	-	-
Stage 2	587	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	234	538	1052	-	-	-
Mov Cap-2 Maneuver	234	-	-	-	-	-
Stage 1	524	-	-	-	-	-
Stage 2	584	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.2	1.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1052	-	421	-	-
HCM Lane V/C Ratio	0.08	-	0.072	-	-
HCM Control Delay (s)	8.7	0	14.2	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.3	-	0.2	-	-




HCM 6th TWSC
32: South East Street & Belchertwon Road

Build Scenario 2
AM Peak

Intersection						
Int Delay, s/veh	7.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	458	190	0	0	374
Future Vol, veh/h	6	458	190	0	0	374
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	3	8	0	0	5
Mvmt Flow	7	498	207	0	0	407
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	614	207	0	-	-	-
Stage 1	207	-	-	-	-	-
Stage 2	407	-	-	-	-	-
Critical Hdwy	6.4	6.23	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	-	-	-	-
Pot Cap-1 Maneuver	459	831	-	0	0	-
Stage 1	832	-	-	0	0	-
Stage 2	676	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	459	831	-	-	-	-
Mov Cap-2 Maneuver	459	-	-	-	-	-
Stage 1	832	-	-	-	-	-
Stage 2	676	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	16.1	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 822		-			
HCM Lane V/C Ratio	- 0.614		-			
HCM Control Delay (s)	- 16.1		-			
HCM Lane LOS	- C		-			
HCM 95th %tile Q(veh)	- 4.3		-			

HCM 6th TWSC
33: Wildwood Driveway & Strong Street

Build Scenario 2
AM Peak

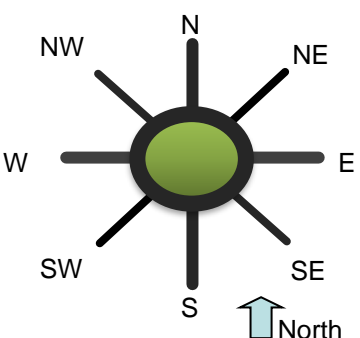
Intersection						
Int Delay, s/veh	3.5					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	46	131	54	158	80	23
Future Vol, veh/h	46	131	54	158	80	23
Conflicting Peds, #/hr	0	7	7	0	0	3
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	5	2	0	10	5
Mvmt Flow	50	142	59	172	87	25

Major/Minor	Major1	Major2	Minor1			
Conflicting Flow All	0	0	199	0	418	131
Stage 1	-	-	-	-	128	-
Stage 2	-	-	-	-	290	-
Critical Hdwy	-	-	4.12	-	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	5.5	-
Critical Hdwy Stg 2	-	-	-	-	5.5	-
Follow-up Hdwy	-	-	2.218	-	3.59	3.345
Pot Cap-1 Maneuver	-	-	1373	-	577	911
Stage 1	-	-	-	-	878	-
Stage 2	-	-	-	-	741	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1364	-	545	902
Mov Cap-2 Maneuver	-	-	-	-	545	-
Stage 1	-	-	-	-	872	-
Stage 2	-	-	-	-	705	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	598	-	-	1364	-
HCM Lane V/C Ratio	0.187	-	-	0.043	-
HCM Control Delay (s)	12.4	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0.1	-

General & Site Information v 4.2								
Analyst:		Eric Beaudry						
Agency/Co:		Pare Corporation						
Date:		4/28/2022						
Project or PI#:		21245.00 Amherst Elementary Schools						
Year, Peak Hour:		2029 Build Scenario 2 AM						
County/District:		Amherst, MA						
Intersection Name:		East Pleasant Street at Triangle Street						



Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			56		171		38	
	NE (2), vph								
	E (3), vph	48				25		122	
	SE (4), vph								
	S (5), vph	201		56				124	
	SW (6), vph								
	W (7), vph	48		313		155			
	NW (8), vph								
Output	Total Vehicles	297	0	425	0	351	0	284	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	96.0%	100.0%	99.0%	100.0%	92.0%	100.0%	93.0%	100.0%
% Heavy Vehicles	4.0%	0.0%	1.0%	0.0%	8.0%	0.0%	7.0%	0.0%
% Bicycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.92	0.95	0.92	0.95	0.92	0.95	0.92	0.95
F _{HV}	0.962	1.000	0.990	1.000	0.926	1.000	0.935	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	61	0	201	0	44	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	54	0	0	0	29	0	142	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	227	0	61	0	0	0	144	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	54	0	344	0	182	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	336	0	467	0	412	0	330	0
Conflicting flow, pcu/h	587	0	427	0	240	0	343	0

Results: Approach Measures of Effectiveness

HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	729	NA	884	NA	1000	NA	909	NA
Entry Flow Rates, vph	323	0	462	0	382	0	309	0
V/C ratio	0.44		0.52		0.38		0.34	
Control Delay, sec/pcu	11.0		11.1		7.7		7.7	
LOS	B		B		A		A	
Average Queue (ft)	25		35		20		16	
95th % Queue (ft)	59		78		49		40	

Overall Intersection Measures of Effectiveness



















Int Control Delay (sec)	9.5	Int LOS	A	Max Approach V/C	0.52
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Notes: v 4.2

Lanes, Volumes, Timings

5: South East Street/North East Street & Main Street

Existing
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	38	183	179	52	134	32	178	152	76	49	210	26
Future Volume (vph)	38	183	179	52	134	32	178	152	76	49	210	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	100		0	0		0
Storage Lanes	0		1	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	0.97		0.99		1.00	0.99			1.00	
Frt			0.850		0.980			0.950			0.988	
Flt Protected		0.991			0.988		0.950				0.992	
Satd. Flow (prot)	0	1852	1524	0	1753	0	1703	1698	0	0	1824	0
Flt Permitted		0.898			0.755		0.472				0.899	
Satd. Flow (perm)	0	1676	1475	0	1337	0	843	1698	0	0	1650	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			206		12			33			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2205			457			209			3887	
Travel Time (s)		50.1			10.4			4.8			88.3	
Confl. Peds. (#/hr)	10		8	8		10	5		11	11		5
Peak Hour Factor	0.87	0.87	0.87	0.90	0.90	0.90	0.86	0.86	0.86	0.84	0.84	0.84
Heavy Vehicles (%)	0%	2%	6%	0%	4%	13%	6%	6%	3%	2%	2%	0%
Adj. Flow (vph)	44	210	206	58	149	36	207	177	88	58	250	31
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	254	206	0	243	0	207	265	0	0	339	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0		11.0	11.0		11.0	11.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0		29.0	29.0		29.0	29.0	
Total Split (%)	39.7%	39.7%	39.7%	39.7%	39.7%		37.2%	37.2%		37.2%	37.2%	
Maximum Green (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		15.4	15.4		15.4		21.4	21.4			21.4	
Actuated g/C Ratio		0.24	0.24		0.24		0.33	0.33			0.33	
v/c Ratio		0.64	0.41		0.75		0.75	0.46			0.62	













Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

Existing
School Dismissal

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	23%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings 5: South East Street/North East Street & Main Street

Existing
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		30.7	6.0		37.3		40.8	18.9			24.9	
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	
Total Delay		30.7	6.0		37.3		40.8	18.9			24.9	
LOS		C	A		D		D	B			C	
Approach Delay		19.7			37.3			28.5			24.9	
Approach LOS		B			D			C			C	
Queue Length 50th (ft)		96	0		90		71	69			108	
Queue Length 95th (ft)		156	40		162		#184	144			200	
Internal Link Dist (ft)		2125			377			129			3807	
Turn Bay Length (ft)			200				100					
Base Capacity (vph)		679	720		549		315	656			622	
Starvation Cap Reductn		0	0		0		0	0			0	
Spillback Cap Reductn		0	0		0		0	0			0	
Storage Cap Reductn		0	0		0		0	0			0	
Reduced v/c Ratio		0.37	0.29		0.44		0.66	0.40			0.55	

Intersection Summary

Area Type: Other

Cycle Length: 78

Actuated Cycle Length: 65.3

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 26.4

Intersection LOS: C

Intersection Capacity Utilization 68.8%






ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: South East Street/North East Street & Main Street

 Ø2	 Ø4	 Ø9
31 s	29 s	18 s
 Ø6	 Ø8	
31 s	29 s	

Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street


















Existing
School Dismissal

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

11: Dickinson Street/Triangle Street & Main Street

Existing
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	18	224	9	10	191	185	14	19	12	283	25	16
Future Volume (vph)	18	224	9	10	191	185	14	19	12	283	25	16
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00						0.98			0.99	
Frt		0.995				0.850		0.965			0.993	
Flt Protected		0.997			0.998			0.985			0.958	
Satd. Flow (prot)	0	1812	0	0	1827	1583	0	1782	0	0	1804	0
Flt Permitted		0.902			0.962			0.838			0.555	
Satd. Flow (perm)	0	1638	0	0	1761	1583	0	1507	0	0	1038	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				210		9			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		642			1229			794			2690	
Travel Time (s)		14.6			27.9			18.0			61.1	
Confl. Peds. (#/hr)	12					12	10		10	10		10
Peak Hour Factor	0.84	0.84	0.84	0.88	0.88	0.88	0.83	0.83	0.83	0.82	0.82	0.82
Heavy Vehicles (%)	6%	4%	0%	0%	4%	2%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	21	267	11	11	217	210	17	23	14	345	30	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	299	0	0	228	210	0	54	0	0	395	0
Turn Type	Perm	NA		Perm	NA	custom	Perm	NA		Perm	NA	
Protected Phases		2			6	7		8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6	7	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	16.0	16.0		16.0	16.0	14.0	14.0	14.0		14.0	14.0	
Total Split (s)	66.0	66.0		66.0	66.0	36.0	31.0	31.0		66.0	66.0	
Total Split (%)	40.5%	40.5%		40.5%	40.5%	22.1%	19.0%	19.0%		40.5%	40.5%	
Maximum Green (s)	60.0	60.0		60.0	60.0	30.0	25.0	25.0		60.0	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0			6.0	6.0		6.0			6.0	
Lead/Lag						Lead	Lag	Lag				
Lead-Lag Optimize?						Yes	Yes	Yes				
Vehicle Extension (s)	3.5	3.5		3.5	3.5	3.5	2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		27.4			27.4	20.7		36.5			60.1	
Actuated g/C Ratio		0.21			0.21	0.16		0.28			0.46	
v/c Ratio		0.86			0.61	0.49		0.13			0.82	

Lanes, Volumes, Timings
11: Dickinson Street/Triangle Street & Main Street













Existing
School Dismissal

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	18%
Maximum Green (s)	28.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	10.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings

11: Dickinson Street/Triangle Street & Main Street

Existing
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		72.9			53.5	11.7		28.4			46.7	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		72.9			53.5	11.7		28.4			46.7	
LOS		E			D	B		C			D	
Approach Delay		72.9			33.5			28.4			46.7	
Approach LOS		E			C			C			D	
Queue Length 50th (ft)		243			175	0		25			279	
Queue Length 95th (ft)		321			253	71		60			#441	
Internal Link Dist (ft)		562			1149			714			2610	
Turn Bay Length (ft)						250						
Base Capacity (vph)		760			817	596		472			490	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.39			0.28	0.35		0.11			0.81	

Intersection Summary

Area Type: Other

Cycle Length: 163

Actuated Cycle Length: 129.6

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.86

Intersection Signal Delay: 47.6

Intersection LOS: D

Intersection Capacity Utilization 61.9%

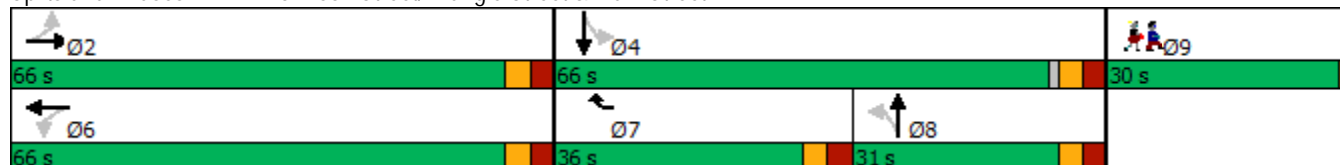
ICU Level of Service B

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 11: Dickinson Street/Triangle Street & Main Street























Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

28: South East Street & College Street

Existing
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	70	255	62	14	171	2	42	79	7	309	118	77
Future Volume (vph)	70	255	62	14	171	2	42	79	7	309	118	77
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	100		0	150		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99		0.99	1.00		1.00	1.00		0.99	0.99	
Frt		0.971			0.999			0.988			0.941	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	1798	0	1805	1879	0	1770	1791	0	1770	1694	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1701	1798	0	1783	1879	0	1765	1791	0	1759	1694	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6						2			16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		879			332			445			264	
Travel Time (s)		20.0			7.5			10.1			6.0	
Confl. Peds. (#/hr)	8		6	6		8	1		2	2		1
Peak Hour Factor	0.89	0.89	0.89	0.82	0.82	0.82	0.85	0.85	0.85	0.78	0.78	0.78
Heavy Vehicles (%)	4%	1%	6%	0%	1%	0%	2%	5%	0%	2%	7%	1%
Adj. Flow (vph)	79	287	70	17	209	2	49	93	8	396	151	99
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	357	0	17	211	0	49	101	0	396	250	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		10.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	12.0		15.0	12.0		11.0	12.0		11.0	12.0	
Total Split (s)	35.0	56.0		35.0	56.0		35.0	56.0		35.0	56.0	
Total Split (%)	17.5%	28.0%		17.5%	28.0%		17.5%	28.0%		17.5%	28.0%	
Maximum Green (s)	30.0	50.0		30.0	50.0		30.0	50.0		30.0	50.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	10.2	30.8		10.2	20.6		8.3	11.4		30.6	36.4	
Actuated g/C Ratio	0.09	0.27		0.09	0.18		0.07	0.10		0.27	0.32	
v/c Ratio	0.51	0.73		0.11	0.62		0.38	0.55		0.83	0.45	

Lanes, Volumes, Timings
28: South East Street & College Street













Existing
School Dismissal

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	9%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	6.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings

28: South East Street & College Street

Existing
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	64.0	47.7		56.4	51.2		63.4	62.3		57.8	36.1	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	64.0	47.7		56.4	51.3		63.4	62.3		57.8	36.1	
LOS	E	D		E	D		E	E		E	D	
Approach Delay		50.7			51.7			62.7			49.4	
Approach LOS		D			D			E			D	
Queue Length 50th (ft)	53	215		11	142		33	67		259	132	
Queue Length 95th (ft)	120	384		37	214		81	136		#457	229	
Internal Link Dist (ft)		799			252			365			184	
Turn Bay Length (ft)	250			100			150			200		
Base Capacity (vph)	467	809		485	842		476	804		476	768	
Starvation Cap Reductn	0	0		0	60		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.17	0.44		0.04	0.27		0.10	0.13		0.83	0.33	

Intersection Summary

Area Type: Other

Cycle Length: 200

Actuated Cycle Length: 113.7

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 51.5

Intersection LOS: D

Intersection Capacity Utilization 66.1%










ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 28: South East Street & College Street




 Ø1	 Ø2	 Ø3	 Ø4	 Ø9
35 s	56 s	35 s	56 s	18 s
 Ø5	 Ø6	 Ø7	 Ø8	
35 s	56 s	35 s	56 s	

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

HCM 6th TWSC

1: East Pleasant Street & Strong Street




Existing
School Dismissal

Intersection						
Int Delay, s/veh	8.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	68	85	210	58	137	247
Future Vol, veh/h	68	85	210	58	137	247
Conflicting Peds, #/hr	23	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	67	67	89	89	75	75
Heavy Vehicles, %	6	7	4	12	4	2
Mvmt Flow	101	127	236	65	183	329
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	993	275	0	0	307	0
Stage 1	275	-	-	-	-	-
Stage 2	718	-	-	-	-	-
Critical Hdwy	6.46	6.27	-	-	4.14	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.363	-	-	2.236	-
Pot Cap-1 Maneuver	268	752	-	-	1242	-
Stage 1	762	-	-	-	-	-
Stage 2	476	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	213	748	-	-	1235	-
Mov Cap-2 Maneuver	213	-	-	-	-	-
Stage 1	757	-	-	-	-	-
Stage 2	381	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	32.1	0		3		
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 353		1235	-	
HCM Lane V/C Ratio	-	- 0.647		0.148	-	
HCM Control Delay (s)	-	- 32.1		8.4	0	
HCM Lane LOS	-	- D		A	A	
HCM 95th %tile Q(veh)	-	- 4.3		0.5	-	

HCM 6th TWSC

2: North East Street & Strong Street

Existing
School Dismissal

Intersection						
Int Delay, s/veh	3.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	110	61	131	156	10
Future Vol, veh/h	8	110	61	131	156	10
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	82	82	85	85	91	91
Heavy Vehicles, %	0	3	7	7	1	10
Mvmt Flow	10	134	72	154	171	11
Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	475	177	182	0	-	0
Stage 1	177	-	-	-	-	-
Stage 2	298	-	-	-	-	-
Critical Hdwy	6.4	6.23	4.17	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	2.263	-	-	-
Pot Cap-1 Maneuver	552	863	1364	-	-	-
Stage 1	859	-	-	-	-	-
Stage 2	758	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	520	863	1364	-	-	-
Mov Cap-2 Maneuver	520	-	-	-	-	-
Stage 1	809	-	-	-	-	-
Stage 2	758	-	-	-	-	-
Approach	EB		NB		SB	
HCM Control Delay, s	10.3		2.5		0	
HCM LOS	B					
Minor Lane/Major Mvmt	NBL		NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1364		-	826	-	-
HCM Lane V/C Ratio	0.053		-	0.174	-	-
HCM Control Delay (s)	7.8		0	10.3	-	-
HCM Lane LOS	A		A	B	-	-
HCM 95th %tile Q(veh)	0.2		-	0.6	-	-

HCM 6th TWSC
8: South Whitney Street/North Whitney Street & Main Street

Existing
School Dismissal

Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	10	466	33	22	341	8	27	9	25	7	8	19
Future Vol, veh/h	10	466	33	22	341	8	27	9	25	7	8	19
Conflicting Peds, #/hr	17	0	17	17	0	17	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	82	82	82	88	88	88	89	89	89	85	85	85
Heavy Vehicles, %	10	5	0	5	6	13	0	11	12	14	0	5
Mvmt Flow	12	568	40	25	388	9	30	10	28	8	9	22

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	414	0	0	625	0	0	1087	1093	605	1091	1109	410
Stage 1	-	-	-	-	-	-	629	629	-	460	460	-
Stage 2	-	-	-	-	-	-	458	464	-	631	649	-
Critical Hdwy	4.2	-	-	4.15	-	-	7.1	6.61	6.32	7.24	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.61	-	6.24	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.61	-	6.24	5.5	-
Follow-up Hdwy	2.29	-	-	2.245	-	-	3.5	4.099	3.408	3.626	4	3.345
Pot Cap-1 Maneuver	1103	-	-	942	-	-	195	206	480	182	211	635
Stage 1	-	-	-	-	-	-	474	462	-	559	569	-
Stage 2	-	-	-	-	-	-	587	549	-	449	469	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1085	-	-	927	-	-	171	189	472	155	194	625
Mov Cap-2 Maneuver	-	-	-	-	-	-	171	189	-	155	194	-
Stage 1	-	-	-	-	-	-	458	447	-	541	541	-
Stage 2	-	-	-	-	-	-	537	522	-	406	454	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.5			26.4			19.3		
HCM LOS							D			C		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	236	1085	-	-	927	-	-	291
HCM Lane V/C Ratio	0.29	0.011	-	-	0.027	-	-	0.137
HCM Control Delay (s)	26.4	8.4	0	-	9	0	-	19.3
HCM Lane LOS	D	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	1.2	0	-	-	0.1	-	-	0.5

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕						↗			↖	
Traffic Vol, veh/h	2	1	24	0	0	0	0	355	42	22	474	0
Future Vol, veh/h	2	1	24	0	0	0	0	355	42	22	474	0
Conflicting Peds, #/hr	1	0	0	0	0	1	4	0	1	1	0	4
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	78	78	78	92	92	92	89	89	89	83	83	92
Heavy Vehicles, %	0	0	4	2	2	2	2	4	10	32	3	0
Mvmt Flow	3	1	31	0	0	0	0	399	47	27	571	0
Major/Minor	Minor2						Major1			Major2		
Conflicting Flow All	1049	1072	571				-	0	0	447	0	0
Stage 1	625	625	-				-	-	-	-	-	-
Stage 2	424	447	-				-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.24				-	-	-	4.42	-	-
Critical Hdwy Stg 1	5.4	5.5	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-				-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.336				-	-	-	2.488	-	-
Pot Cap-1 Maneuver	254	222	517				0	-	-	972	-	0
Stage 1	537	480	-				0	-	-	-	-	0
Stage 2	664	577	-				0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	244	0	517				-	-	-	972	-	-
Mov Cap-2 Maneuver	244	0	-				-	-	-	-	-	-
Stage 1	537	0	-				-	-	-	-	-	-
Stage 2	637	0	-				-	-	-	-	-	-
Approach	EB						NB			SB		
HCM Control Delay, s	13.2						0			0.4		
HCM LOS	B											
Minor Lane/Major Mvmt		NBT	NBR	EBLn1	SBL	SBT						
Capacity (veh/h)		-	-	476	972	-						
HCM Lane V/C Ratio		-	-	0.073	0.027	-						
HCM Control Delay (s)		-	-	13.2	8.8	0						
HCM Lane LOS		-	-	B	A	A						
HCM 95th %tile Q(veh)		-	-	0.2	0.1	-						




HCM 6th TWSC
17: South East Street & Fort River Exit

Existing
School Dismissal

Intersection						
Int Delay, s/veh	6.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	64	46	359	0	0	435
Future Vol, veh/h	64	46	359	0	0	435
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	45	45	90	90	81	81
Heavy Vehicles, %	5	11	4	2	2	4
Mvmt Flow	142	102	399	0	0	537
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	936	399	0	-	-	-
Stage 1	399	-	-	-	-	-
Stage 2	537	-	-	-	-	-
Critical Hdwy	6.45	6.31	-	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.399	-	-	-	-
Pot Cap-1 Maneuver	291	632	-	0	0	-
Stage 1	671	-	-	0	0	-
Stage 2	580	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	291	632	-	-	-	-
Mov Cap-2 Maneuver	291	-	-	-	-	-
Stage 1	671	-	-	-	-	-
Stage 2	580	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	30.7	0	0			
HCM LOS	D					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	-		376			
HCM Lane V/C Ratio	-		0.65			
HCM Control Delay (s)	-		30.7			
HCM Lane LOS	-		D			
HCM 95th %tile Q(veh)	-		4.4			

Intersection

Int Delay, s/veh 0.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	137	18	2	83	3	1
Future Vol, veh/h	137	18	2	83	3	1
Conflicting Peds, #/hr	0	1	1	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	72	72	42	42
Heavy Vehicles, %	6	11	50	11	33	0
Mvmt Flow	173	23	3	115	7	2




Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	197
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.6
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.65
Pot Cap-1 Maneuver	-	-	1135
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1134
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	667	-	-	1134	-
HCM Lane V/C Ratio	0.014	-	-	0.002	-
HCM Control Delay (s)	10.5	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-




HCM 6th TWSC
21: Red Gate Lane & Strong Street

Existing
School Dismissal

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	125	6	4	77	7	6
Future Vol, veh/h	125	6	4	77	7	6
Conflicting Peds, #/hr	0	2	2	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	74	74	74	74	63	63
Heavy Vehicles, %	2	17	50	3	14	0
Mvmt Flow	169	8	5	104	11	10
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	179	0	289	177
Stage 1	-	-	-	-	175	-
Stage 2	-	-	-	-	114	-
Critical Hdwy	-	-	4.6	-	6.54	6.2
Critical Hdwy Stg 1	-	-	-	-	5.54	-
Critical Hdwy Stg 2	-	-	-	-	5.54	-
Follow-up Hdwy	-	-	2.65	-	3.626	3.3
Pot Cap-1 Maneuver	-	-	1154	-	677	871
Stage 1	-	-	-	-	827	-
Stage 2	-	-	-	-	882	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1152	-	672	868
Mov Cap-2 Maneuver	-	-	-	-	672	-
Stage 1	-	-	-	-	825	-
Stage 2	-	-	-	-	878	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.4		9.9	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	750	-	-	1152	-	
HCM Lane V/C Ratio	0.028	-	-	0.005	-	
HCM Control Delay (s)	9.9	-	-	8.1	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	

HCM 6th TWSC
26: East Pleasant Street & Clark Hill Road

Existing
School Dismissal




Intersection						
Int Delay, s/veh	2					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	66	31	260	315	13
Future Vol, veh/h	13	66	31	260	315	13
Conflicting Peds, #/hr	0	0	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	72	72	76	76	74	74
Heavy Vehicles, %	8	5	10	4	3	0
Mvmt Flow	18	92	41	342	426	18
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	861	437	446	0	-	0
Stage 1	437	-	-	-	-	-
Stage 2	424	-	-	-	-	-
Critical Hdwy	6.48	6.25	4.2	-	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.345	2.29	-	-	-
Pot Cap-1 Maneuver	318	613	1073	-	-	-
Stage 1	639	-	-	-	-	-
Stage 2	648	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	302	612	1071	-	-	-
Mov Cap-2 Maneuver	302	-	-	-	-	-
Stage 1	608	-	-	-	-	-
Stage 2	647	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.7	0.9		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1071	-	524	-	-	
HCM Lane V/C Ratio	0.038	-	0.209	-	-	
HCM Control Delay (s)	8.5	0	13.7	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.8	-	-	

HCM 6th TWSC
32: South East Street & Belchertwon Road

Existing
School Dismissal

Intersection

Int Delay, s/veh 3

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	224	151	0	0	504
Future Vol, veh/h	5	224	151	0	0	504
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	80	80	85	85	78	78
Heavy Vehicles, %	0	6	5	0	0	7
Mvmt Flow	6	280	178	0	0	646

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	824	178	0
Stage 1	178	-	-
Stage 2	646	-	-
Critical Hdwy	6.4	6.26	-
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.354	-
Pot Cap-1 Maneuver	346	855	0
Stage 1	858	-	0
Stage 2	526	-	0
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	346	855	-
Mov Cap-2 Maneuver	346	-	-
Stage 1	858	-	-
Stage 2	526	-	-

Approach	WB	NB	SB
HCM Control Delay, s	11.6	0	0
HCM LOS	B		




Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 828	-
HCM Lane V/C Ratio	- 0.346	-
HCM Control Delay (s)	- 11.6	-
HCM Lane LOS	- B	-
HCM 95th %tile Q(veh)	- 1.6	-

HCM 6th TWSC
33: Wildwood Driveway & Strong Street

Existing
School Dismissal

Intersection

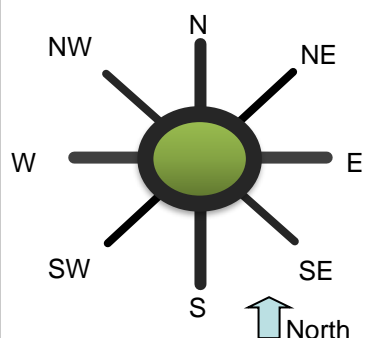
Int Delay, s/veh 4.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	126	65	14	73	81	24
Future Vol, veh/h	126	65	14	73	81	24
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	65	65	92	92	49	49
Heavy Vehicles, %	2	5	2	0	9	4
Mvmt Flow	194	100	15	79	165	49

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	294
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.12
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.218
Pot Cap-1 Maneuver	-	-	1268
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1268
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	13.1
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	655	-	-	1268	-
HCM Lane V/C Ratio	0.327	-	-	0.012	-
HCM Control Delay (s)	13.1	-	-	7.9	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	1.4	-	-	0	-

General & Site Information v 4.2									
Analyst:		Eric Beaudry							
Agency/Co:		Pare Corporation							
Date:		4/26/2022							
Project or PI#:		21245.00 Amherst Elementary Schools							
Year, Peak Hour:		2022 Existing School Dismissal							
County/District:		Amherst, MA							
Intersection Name:		East Pleasant Street at Triangle Street							
									
Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			86		174		47	
	NE (2), vph								
	E (3), vph	41				44		225	
	SE (4), vph								
	S (5), vph	212		43				180	
	SW (6), vph								
	W (7), vph	69		180		136			
	NW (8), vph								
Output	Total Vehicles	322	0	309	0	354	0	452	0
Volume Characteristics		N	NE	E	SE	S	SW	W	NW
% Cars		99.0%	100.0%	99.0%	100.0%	94.0%	100.0%	95.0%	100.0%
% Heavy Vehicles		1.0%	0.0%	1.0%	0.0%	6.0%	0.0%	5.0%	0.0%
% Bicycle		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)		0	0	0	0	0	0	0	0
PHF		0.92	0.95	0.83	0.95	0.82	0.95	0.91	0.95
F _{HV}		0.990	1.000	0.990	1.000	0.943	1.000	0.952	1.000
F _{ped}		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Entry/Conflicting Flows		N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h		0	0	105	0	225	0	54	0
NE (2), pcu/h		0	0	0	0	0	0	0	0
E (3), pcu/h		45	0	0	0	57	0	260	0
SE (4), pcu/h		0	0	0	0	0	0	0	0
S (5), pcu/h		233	0	52	0	0	0	208	0
SW (6), pcu/h		0	0	0	0	0	0	0	0
W (7), pcu/h		76	0	219	0	176	0	0	0
NW (8), pcu/h		0	0	0	0	0	0	0	0
Entry flow, pcu/h		354	0	376	0	458	0	522	0
Conflicting flow, pcu/h		447	0	455	0	359	0	330	0

Results: Approach Measures of Effectiveness

HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	866	NA	859	NA	903	NA	939	NA
Entry Flow Rates, vph	350	0	372	0	432	0	497	0
V/C ratio	0.40		0.43		0.48		0.53	
Control Delay, sec/pcu	9.0		9.5		10.0		10.7	
LOS	A		A		A		B	
Average Queue (ft)	22		25		30		37	
95th % Queue (ft)	50		56		70		84	

Overall Intersection Measures of Effectiveness



















Int Control Delay (sec)	9.9	Int LOS	A	Max Approach V/C	0.53
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Notes: v 4.2

Lanes, Volumes, Timings

5: South East Street/North East Street & Main Street

No-Build
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	190	186	54	139	34	185	158	79	51	218	27
Future Volume (vph)	40	190	186	54	139	34	185	158	79	51	218	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	100		0	0		0
Storage Lanes	0		1	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	0.97		0.99		1.00	0.99			1.00	
Frt			0.850		0.980			0.950			0.988	
Flt Protected		0.991			0.988		0.950				0.992	
Satd. Flow (prot)	0	1852	1524	0	1753	0	1703	1698	0	0	1824	0
Flt Permitted		0.900			0.767		0.484				0.901	
Satd. Flow (perm)	0	1679	1475	0	1358	0	864	1698	0	0	1654	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			202		12			33			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2205			457			209			3887	
Travel Time (s)		50.1			10.4			4.8			88.3	
Confl. Peds. (#/hr)	10		8	8		10	5		11	11		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	6%	0%	4%	13%	6%	6%	3%	2%	2%	0%
Adj. Flow (vph)	43	207	202	59	151	37	201	172	86	55	237	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	250	202	0	247	0	201	258	0	0	321	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0		11.0	11.0		11.0	11.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0		29.0	29.0		29.0	29.0	
Total Split (%)	39.7%	39.7%	39.7%	39.7%	39.7%		37.2%	37.2%		37.2%	37.2%	
Maximum Green (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		15.2	15.2		15.2		20.3	20.3			20.3	
Actuated g/C Ratio		0.24	0.24		0.24		0.32	0.32			0.32	
v/c Ratio		0.63	0.40		0.75		0.74	0.46			0.61	













Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

No-Build
School Dismissal

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	23%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

No-Build
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		29.9	6.0		36.7		39.4	18.9			24.6	
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	
Total Delay		29.9	6.0		36.7		39.4	18.9			24.6	
LOS		C	A		D		D	B			C	
Approach Delay		19.2			36.7			27.9			24.6	
Approach LOS		B			D			C			C	
Queue Length 50th (ft)		94	0		91		68	67			101	
Queue Length 95th (ft)		161	44		164		#188	148			206	
Internal Link Dist (ft)		2125			377			129			3807	
Turn Bay Length (ft)			200				100					
Base Capacity (vph)		696	729		570		330	670			637	
Starvation Cap Reductn		0	0		0		0	0			0	
Spillback Cap Reductn		0	0		0		0	0			0	
Storage Cap Reductn		0	0		0		0	0			0	
Reduced v/c Ratio		0.36	0.28		0.43		0.61	0.39			0.50	

Intersection Summary

Area Type: Other

Cycle Length: 78

Actuated Cycle Length: 64.2

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 26.0

Intersection LOS: C

Intersection Capacity Utilization 70.9%






ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: South East Street/North East Street & Main Street


















 Ø2	 Ø4	 Ø9
31 s	29 s	18 s
 Ø6	 Ø8	
31 s	29 s	

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

11: Dickinson Street/Triangle Street & Main Street

No-Build
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	232	10	11	198	192	15	20	13	294	26	17
Future Volume (vph)	19	232	10	11	198	192	15	20	13	294	26	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00						0.98			0.99	
Frt		0.995				0.850		0.964			0.993	
Flt Protected		0.996			0.997			0.985			0.958	
Satd. Flow (prot)	0	1811	0	0	1825	1583	0	1779	0	0	1805	0
Flt Permitted		0.879			0.955			0.851			0.553	
Satd. Flow (perm)	0	1597	0	0	1748	1583	0	1528	0	0	1034	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				209		10			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		642			1229			794			2690	
Travel Time (s)		14.6			27.9			18.0			61.1	
Confl. Peds. (#/hr)	12					12	10		10	10		10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	4%	0%	0%	4%	2%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	21	252	11	12	215	209	16	22	14	320	28	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	284	0	0	227	209	0	52	0	0	366	0
Turn Type	Perm	NA		Perm	NA	custom	Perm	NA		Perm	NA	
Protected Phases		2			6	7		8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6	7	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	16.0	16.0		16.0	16.0	16.0	14.0	14.0		14.0	14.0	
Total Split (s)	66.0	66.0		66.0	66.0	36.0	31.0	31.0		66.0	66.0	
Total Split (%)	40.5%	40.5%		40.5%	40.5%	22.1%	19.0%	19.0%		40.5%	40.5%	
Maximum Green (s)	60.0	60.0		60.0	60.0	30.0	25.0	25.0		60.0	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0			6.0	6.0		6.0			6.0	
Lead/Lag						Lead	Lag	Lag				
Lead-Lag Optimize?						Yes	Yes	Yes				
Vehicle Extension (s)	3.5	3.5		3.5	3.5	3.5	2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		26.1			26.1	20.6		36.5			60.1	
Actuated g/C Ratio		0.20			0.20	0.16		0.28			0.47	
v/c Ratio		0.87			0.64	0.49		0.12			0.75	

Lanes, Volumes, Timings
11: Dickinson Street/Triangle Street & Main Street













No-Build
School Dismissal

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	18%
Maximum Green (s)	28.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	10.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings

11: Dickinson Street/Triangle Street & Main Street

No-Build
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		75.3			55.1	11.6		27.2			40.9	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		75.3			55.1	11.6		27.2			40.9	
LOS		E			E	B		C			D	
Approach Delay		75.3			34.2			27.2			40.9	
Approach LOS		E			C			C			D	
Queue Length 50th (ft)		229			174	0		23			243	
Queue Length 95th (ft)		335			260	78		62			#459	
Internal Link Dist (ft)		562			1149			714			2610	
Turn Bay Length (ft)						250						
Base Capacity (vph)		748			818	599		485			493	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.38			0.28	0.35		0.11			0.74	

Intersection Summary

Area Type: Other

Cycle Length: 163

Actuated Cycle Length: 128.4

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.87

Intersection Signal Delay: 46.3

Intersection LOS: D

Intersection Capacity Utilization 64.0%

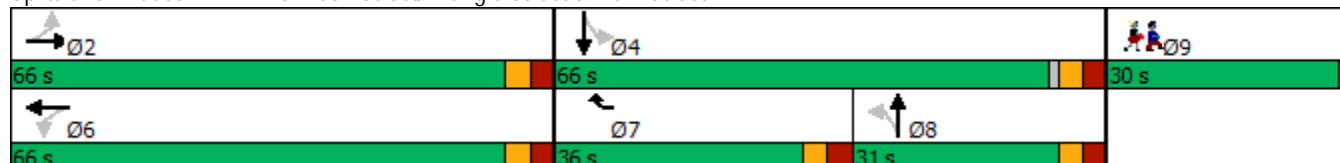
ICU Level of Service B

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 11: Dickinson Street/Triangle Street & Main Street























Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

28: South East Street & College Street

No-Build
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	73	265	65	15	178	3	44	82	8	320	123	80
Future Volume (vph)	73	265	65	15	178	3	44	82	8	320	123	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	100		0	150		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99		0.99	1.00		1.00	1.00		0.99	0.99	
Frt		0.970			0.998			0.986			0.941	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	1796	0	1805	1877	0	1770	1788	0	1770	1694	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1700	1796	0	1783	1877	0	1765	1788	0	1759	1694	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6						2			16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		879			332			445			264	
Travel Time (s)		20.0			7.5			10.1			6.0	
Confl. Peds. (#/hr)	8		6	6		8	1		2	2		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	1%	6%	0%	1%	0%	2%	5%	0%	2%	7%	1%
Adj. Flow (vph)	79	288	71	16	193	3	48	89	9	348	134	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	79	359	0	16	196	0	48	98	0	348	221	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		10.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	12.0		15.0	12.0		11.0	12.0		11.0	12.0	
Total Split (s)	35.0	56.0		35.0	56.0		35.0	56.0		35.0	56.0	
Total Split (%)	17.5%	28.0%		17.5%	28.0%		17.5%	28.0%		17.5%	28.0%	
Maximum Green (s)	30.0	50.0		30.0	50.0		30.0	50.0		30.0	50.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	10.2	30.1		10.2	19.9		8.2	11.3		30.6	36.4	
Actuated g/C Ratio	0.09	0.27		0.09	0.18		0.07	0.10		0.27	0.32	
v/c Ratio	0.51	0.74		0.10	0.59		0.38	0.54		0.72	0.40	

Lanes, Volumes, Timings
28: South East Street & College Street













No-Build
School Dismissal

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	9%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	6.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings

28: South East Street & College Street

No-Build
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	63.6	48.8		55.8	50.3		62.9	61.6		50.2	34.3	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	63.6	48.8		55.8	50.3		62.9	61.6		50.2	34.3	
LOS	E	D		E	D		E	E		D	C	
Approach Delay		51.5			50.7			62.0			44.0	
Approach LOS		D			D			E			D	
Queue Length 50th (ft)	53	216		10	131		32	64		216	111	
Queue Length 95th (ft)	121	392		38	222		83	140		#475	238	
Internal Link Dist (ft)		799			252			365			184	
Turn Bay Length (ft)	250			100			150			200		
Base Capacity (vph)	471	815		489	848		480	809		480	774	
Starvation Cap Reductn	0	0		0	58		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.17	0.44		0.03	0.25		0.10	0.12		0.72	0.29	

Intersection Summary

Area Type: Other

Cycle Length: 200

Actuated Cycle Length: 112.8

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 49.4

Intersection LOS: D

Intersection Capacity Utilization 67.4%










ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 28: South East Street & College Street




 Ø1	 Ø2	 Ø3	 Ø4	 Ø9
35 s	56 s	35 s	56 s	18 s
 Ø5	 Ø6	 Ø7	 Ø8	
35 s	56 s	35 s	56 s	

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

HCM 6th TWSC

1: East Pleasant Street & Strong Street




No-Build
School Dismissal

Intersection						
Int Delay, s/veh	5.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	71	89	218	61	142	256
Future Vol, veh/h	71	89	218	61	142	256
Conflicting Peds, #/hr	23	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	7	4	12	4	2
Mvmt Flow	77	97	237	66	154	278
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	885	276	0	0	309	0
Stage 1	276	-	-	-	-	-
Stage 2	609	-	-	-	-	-
Critical Hdwy	6.46	6.27	-	-	4.14	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.363	-	-	2.236	-
Pot Cap-1 Maneuver	310	751	-	-	1240	-
Stage 1	761	-	-	-	-	-
Stage 2	535	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	257	747	-	-	1233	-
Mov Cap-2 Maneuver	257	-	-	-	-	-
Stage 1	756	-	-	-	-	-
Stage 2	446	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	20.4		0		3	
HCM LOS	C					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	405	1233	-
HCM Lane V/C Ratio		-	-	0.429	0.125	-
HCM Control Delay (s)		-	-	20.4	8.3	0
HCM Lane LOS		-	-	C	A	A
HCM 95th %tile Q(veh)		-	-	2.1	0.4	-

HCM 6th TWSC





2: North East Street & Strong Street

No-Build
School Dismissal

Intersection						
Int Delay, s/veh	3.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	114	64	136	162	11
Future Vol, veh/h	9	114	64	136	162	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	3	7	7	1	10
Mvmt Flow	10	124	70	148	176	12
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	470	182	188	0	-	0
Stage 1	182	-	-	-	-	-
Stage 2	288	-	-	-	-	-
Critical Hdwy	6.4	6.23	4.17	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	2.263	-	-	-
Pot Cap-1 Maneuver	556	858	1357	-	-	-
Stage 1	854	-	-	-	-	-
Stage 2	766	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	525	858	1357	-	-	-
Mov Cap-2 Maneuver	525	-	-	-	-	-
Stage 1	806	-	-	-	-	-
Stage 2	766	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.2	2.5		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1357	-	820	-	-	
HCM Lane V/C Ratio	0.051	-	0.163	-	-	
HCM Control Delay (s)	7.8	0	10.2	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-	

HCM 6th TWSC
8: South Whitney Street/North Whitney Street & Main Street




No-Build
School Dismissal




Intersection												
Int Delay, s/veh	2.5											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	11	483	35	23	354	9	28	10	26	8	9	20
Future Vol, veh/h	11	483	35	23	354	9	28	10	26	8	9	20
Conflicting Peds, #/hr	17	0	17	17	0	17	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	5	0	5	6	13	0	11	12	14	0	5
Mvmt Flow	12	525	38	25	385	10	30	11	28	9	10	22
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	412	0	0	580	0	0	1041	1047	561	1045	1061	407
Stage 1	-	-	-	-	-	-	585	585	-	457	457	-
Stage 2	-	-	-	-	-	-	456	462	-	588	604	-
Critical Hdwy	4.2	-	-	4.15	-	-	7.1	6.61	6.32	7.24	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.61	-	6.24	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.61	-	6.24	5.5	-
Follow-up Hdwy	2.29	-	-	2.245	-	-	3.5	4.099	3.408	3.626	4	3.345
Pot Cap-1 Maneuver	1105	-	-	979	-	-	210	220	509	196	226	638
Stage 1	-	-	-	-	-	-	501	483	-	561	571	-
Stage 2	-	-	-	-	-	-	588	550	-	475	491	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1087	-	-	963	-	-	185	203	501	168	208	628
Mov Cap-2 Maneuver	-	-	-	-	-	-	185	203	-	168	208	-
Stage 1	-	-	-	-	-	-	485	468	-	543	544	-
Stage 2	-	-	-	-	-	-	539	524	-	431	475	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.5			24.5			18.8		
HCM LOS							C			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	253	1087	-	-	963	-	-	301				
HCM Lane V/C Ratio	0.275	0.011	-	-	0.026	-	-	0.134				
HCM Control Delay (s)	24.5	8.3	0	-	8.8	0	-	18.8				
HCM Lane LOS	C	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	1.1	0	-	-	0.1	-	-	0.5				

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Vol, veh/h	3	2	25	0	0	0	0	368	44	23	491	0
Future Vol, veh/h	3	2	25	0	0	0	0	368	44	23	491	0
Conflicting Peds, #/hr	1	0	0	0	0	1	4	0	1	1	0	4
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	4	2	2	2	2	4	10	32	3	0
Mvmt Flow	3	2	27	0	0	0	0	400	48	25	534	0
Major/Minor	Minor2						Major1			Major2		
Conflicting Flow All	1009	1033	534				-	0	0	449	0	0
Stage 1	584	584	-				-	-	-	-	-	-
Stage 2	425	449	-				-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.24				-	-	-	4.42	-	-
Critical Hdwy Stg 1	5.4	5.5	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-				-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.336				-	-	-	2.488	-	-
Pot Cap-1 Maneuver	269	234	542				0	-	-	970	-	0
Stage 1	561	501	-				0	-	-	-	-	0
Stage 2	664	576	-				0	-	-	-	-	0
Platoon blocked, %								-	-	-		
Mov Cap-1 Maneuver	259	0	542				-	-	-	970	-	-
Mov Cap-2 Maneuver	259	0	-				-	-	-	-	-	-
Stage 1	561	0	-				-	-	-	-	-	-
Stage 2	639	0	-				-	-	-	-	-	-
Approach	EB						NB			SB		
HCM Control Delay, s	13						0			0.4		
HCM LOS	B											
Minor Lane/Major Mvmt		NBT	NBR	EBLn1	SBL	SBT						
Capacity (veh/h)		-	-	485	970	-						
HCM Lane V/C Ratio		-	-	0.067	0.026	-						
HCM Control Delay (s)		-	-	13	8.8	0						
HCM Lane LOS		-	-	B	A	A						
HCM 95th %tile Q(veh)		-	-	0.2	0.1	-						

HCM 6th TWSC
17: South East Street & Fort River Exit




No-Build
School Dismissal

Intersection						
Int Delay, s/veh	2.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	67	48	372	0	0	451
Future Vol, veh/h	67	48	372	0	0	451
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	11	4	2	2	4
Mvmt Flow	73	52	404	0	0	490
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	894	404	0	-	-	-
Stage 1	404	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Critical Hdwy	6.45	6.31	-	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.399	-	-	-	-
Pot Cap-1 Maneuver	308	628	-	0	0	-
Stage 1	668	-	-	0	0	-
Stage 2	610	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	308	628	-	-	-	-
Mov Cap-2 Maneuver	308	-	-	-	-	-
Stage 1	668	-	-	-	-	-
Stage 2	610	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	18.5	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	-		391			
HCM Lane V/C Ratio	-		0.32			
HCM Control Delay (s)	-		18.5			
HCM Lane LOS	-		C			
HCM 95th %tile Q(veh)	-		1.4			

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	142	19	3	86	4	2
Future Vol, veh/h	142	19	3	86	4	2
Conflicting Peds, #/hr	0	1	1	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	11	50	11	33	0
Mvmt Flow	154	21	3	93	4	2
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	176	0	266	167
Stage 1	-	-	-	-	166	-
Stage 2	-	-	-	-	100	-
Critical Hdwy	-	-	4.6	-	6.73	6.2
Critical Hdwy Stg 1	-	-	-	-	5.73	-
Critical Hdwy Stg 2	-	-	-	-	5.73	-
Follow-up Hdwy	-	-	2.65	-	3.797	3.3
Pot Cap-1 Maneuver	-	-	1157	-	661	882
Stage 1	-	-	-	-	794	-
Stage 2	-	-	-	-	852	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1156	-	658	880
Mov Cap-2 Maneuver	-	-	-	-	658	-
Stage 1	-	-	-	-	793	-
Stage 2	-	-	-	-	849	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.3		10.1	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	718	-	-	1156	-	
HCM Lane V/C Ratio	0.009	-	-	0.003	-	
HCM Control Delay (s)	10.1	-	-	8.1	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	




HCM 6th TWSC
21: Red Gate Lane & Strong Street

No-Build
School Dismissal

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	130	7	5	80	8	7
Future Vol, veh/h	130	7	5	80	8	7
Conflicting Peds, #/hr	0	2	2	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	17	50	3	14	0
Mvmt Flow	141	8	5	87	9	8
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	151	0	244	149
Stage 1	-	-	-	-	147	-
Stage 2	-	-	-	-	97	-
Critical Hdwy	-	-	4.6	-	6.54	6.2
Critical Hdwy Stg 1	-	-	-	-	5.54	-
Critical Hdwy Stg 2	-	-	-	-	5.54	-
Follow-up Hdwy	-	-	2.65	-	3.626	3.3
Pot Cap-1 Maneuver	-	-	1184	-	719	903
Stage 1	-	-	-	-	852	-
Stage 2	-	-	-	-	898	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1182	-	715	900
Mov Cap-2 Maneuver	-	-	-	-	715	-
Stage 1	-	-	-	-	850	-
Stage 2	-	-	-	-	894	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.5		9.6	
HCM LOS					A	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	791	-	-	1182	-	
HCM Lane V/C Ratio	0.021	-	-	0.005	-	
HCM Control Delay (s)	9.6	-	-	8.1	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0.1	-	-	0	-	




HCM 6th TWSC
26: East Pleasant Street & Clark Hill Road

No-Build
School Dismissal

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	69	33	270	327	14
Future Vol, veh/h	14	69	33	270	327	14
Conflicting Peds, #/hr	0	0	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	5	10	4	3	0
Mvmt Flow	15	75	36	293	355	15
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	730	365	372	0	-	0
Stage 1	365	-	-	-	-	-
Stage 2	365	-	-	-	-	-
Critical Hdwy	6.48	6.25	4.2	-	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.345	2.29	-	-	-
Pot Cap-1 Maneuver	381	673	1144	-	-	-
Stage 1	689	-	-	-	-	-
Stage 2	689	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	365	672	1142	-	-	-
Mov Cap-2 Maneuver	365	-	-	-	-	-
Stage 1	661	-	-	-	-	-
Stage 2	688	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.2	0.9		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1142	-	589	-	-	
HCM Lane V/C Ratio	0.031	-	0.153	-	-	
HCM Control Delay (s)	8.3	0	12.2	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.5	-	-	




HCM 6th TWSC
32: South East Street & Belchertwon Road

No-Build
School Dismissal

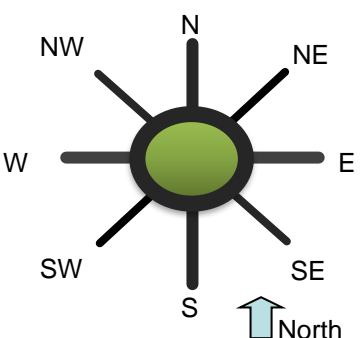
Intersection						
Int Delay, s/veh	2.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	232	157	0	0	522
Future Vol, veh/h	6	232	157	0	0	522
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	95	92	92	92	92
Heavy Vehicles, %	0	6	5	0	0	7
Mvmt Flow	7	244	171	0	0	567
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	738	171	0	-	-	-
Stage 1	171	-	-	-	-	-
Stage 2	567	-	-	-	-	-
Critical Hdwy	6.4	6.26	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.354	-	-	-	-
Pot Cap-1 Maneuver	388	862	-	0	0	-
Stage 1	864	-	-	0	0	-
Stage 2	572	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	388	862	-	-	-	-
Mov Cap-2 Maneuver	388	-	-	-	-	-
Stage 1	864	-	-	-	-	-
Stage 2	572	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11.2	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	-	835	-			
HCM Lane V/C Ratio	-	0.3	-			
HCM Control Delay (s)	-	11.2	-			
HCM Lane LOS	-	B	-			
HCM 95th %tile Q(veh)	-	1.3	-			

HCM 6th TWSC
33: Wildwood Driveway & Strong Street

No-Build
School Dismissal

Intersection						
Int Delay, s/veh	3.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	131	68	15	76	84	25
Future Vol, veh/h	131	68	15	76	84	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	5	2	0	9	4
Mvmt Flow	142	74	16	83	91	27
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	216	0	294	179
Stage 1	-	-	-	-	179	-
Stage 2	-	-	-	-	115	-
Critical Hdwy	-	-	4.12	-	6.49	6.24
Critical Hdwy Stg 1	-	-	-	-	5.49	-
Critical Hdwy Stg 2	-	-	-	-	5.49	-
Follow-up Hdwy	-	-	2.218	-	3.581	3.336
Pot Cap-1 Maneuver	-	-	1354	-	682	859
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	893	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1354	-	674	859
Mov Cap-2 Maneuver	-	-	-	-	674	-
Stage 1	-	-	-	-	835	-
Stage 2	-	-	-	-	882	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1.3		11.1	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	709	-	-	1354	-	
HCM Lane V/C Ratio	0.167	-	-	0.012	-	
HCM Control Delay (s)	11.1	-	-	7.7	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.6	-	-	0	-	

General & Site Information v 4.2								
Analyst:		Eric Beaudry						
Agency/Co:		Pare Corporation						
Date:		4/26/2022						
Project or PI#:		21245.00 Amherst Elementary Schools						
Year, Peak Hour:		2029 No-Build School Dismissal						
County/District:		Amherst, MA						
Intersection Name:		East Pleasant Street at Triangle Street						



Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			90		181		49	
	NE (2), vph								
	E (3), vph	43				46		233	
	SE (4), vph								
	S (5), vph	220		45				187	
	SW (6), vph								
	W (7), vph	72		187		141			
	NW (8), vph								
Output	Total Vehicles	335	0	322	0	368	0	469	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	99.0%	100.0%	99.0%	100.0%	94.0%	100.0%	95.0%	100.0%
% Heavy Vehicles	1.0%	0.0%	1.0%	0.0%	6.0%	0.0%	5.0%	0.0%
% Bicycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.92	0.95	0.92	0.95	0.92	0.95	0.92	0.95
F _{HV}	0.990	1.000	0.990	1.000	0.943	1.000	0.952	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	99	0	209	0	56	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	47	0	0	0	53	0	266	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	242	0	49	0	0	0	213	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	79	0	205	0	162	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	368	0	354	0	424	0	535	0
Conflicting flow, pcu/h	417	0	427	0	369	0	338	0

Results: Approach Measures of Effectiveness

HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	893	NA	884	NA	893	NA	931	NA
Entry Flow Rates, vph	364	0	350	0	400	0	510	0
V/C ratio	0.41		0.40		0.45		0.55	
Control Delay, sec/pcu	8.8		8.7		9.5		11.2	
LOS	A		A		A		B	
Average Queue (ft)	22		21		26		40	
95th % Queue (ft)	51		48		62		90	

Overall Intersection Measures of Effectiveness








Int Control Delay (sec)	9.7	Int LOS	A	Max Approach V/C	0.55
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Notes: v 4.2

Lanes, Volumes, Timings

5: South East Street/North East Street & Main Street

Build Scenario 1
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	46	207	186	54	139	36	189	165	79	51	218	27
Future Volume (vph)	46	207	186	54	139	36	189	165	79	51	218	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	100		0	0		0
Storage Lanes	0		1	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	0.97		0.99		1.00	0.99			1.00	
Frt			0.850		0.979			0.951			0.988	
Flt Protected		0.991			0.988		0.950				0.992	
Satd. Flow (prot)	0	1853	1524	0	1750	0	1703	1699	0	0	1824	0
Flt Permitted		0.891			0.742		0.479				0.900	
Satd. Flow (perm)	0	1663	1475	0	1312	0	855	1699	0	0	1652	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			202		13			32			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2205			457			209			3887	
Travel Time (s)		50.1			10.4			4.8			88.3	
Confl. Peds. (#/hr)	10		8	8		10	5		11	11		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	6%	0%	4%	13%	6%	6%	3%	2%	2%	0%
Adj. Flow (vph)	50	225	202	59	151	39	205	179	86	55	237	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	275	202	0	249	0	205	265	0	0	321	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0		11.0	11.0		11.0	11.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0		29.0	29.0		29.0	29.0	
Total Split (%)	39.7%	39.7%	39.7%	39.7%	39.7%		37.2%	37.2%		37.2%	37.2%	
Maximum Green (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		16.4	16.4		16.4		20.6	20.6			20.6	
Actuated g/C Ratio		0.25	0.25		0.25		0.31	0.31			0.31	
v/c Ratio		0.66	0.39		0.74		0.76	0.48			0.61	













Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

Build Scenario 1
School Dismissal

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	23%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

Build Scenario 1
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		30.8	5.7		35.7		42.8	20.0			25.4	
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	
Total Delay		30.8	5.7		35.7		42.8	20.0			25.4	
LOS		C	A		D		D	B			C	
Approach Delay		20.2			35.7			30.0			25.4	
Approach LOS		C			D			C			C	
Queue Length 50th (ft)		105	0		92		73	73			105	
Queue Length 95th (ft)		177	43		167		#200	158			212	
Internal Link Dist (ft)		2125			377			129			3807	
Turn Bay Length (ft)			200				100					
Base Capacity (vph)		673	717		538		319	654			621	
Starvation Cap Reductn		0	0		0		0	0			0	
Spillback Cap Reductn		0	0		0		0	0			0	
Storage Cap Reductn		0	0		0		0	0			0	
Reduced v/c Ratio		0.41	0.28		0.46		0.64	0.41			0.52	

Intersection Summary

Area Type: Other

Cycle Length: 78

Actuated Cycle Length: 65.7

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 26.9

Intersection LOS: C

Intersection Capacity Utilization 72.6%






ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: South East Street/North East Street & Main Street


















 Ø2	 Ø4	 Ø9
31 s	29 s	18 s
 Ø6	 Ø8	
31 s	29 s	

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

11: Dickinson Street/Triangle Street & Main Street

Build Scenario 1
School Dismissal













												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	259	10	11	198	196	15	20	13	294	26	17
Future Volume (vph)	19	259	10	11	198	196	15	20	13	294	26	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00						0.98			0.99	
Frt		0.995				0.850		0.964			0.993	
Flt Protected		0.997			0.997			0.985			0.958	
Satd. Flow (prot)	0	1812	0	0	1825	1583	0	1779	0	0	1805	0
Flt Permitted		0.928			0.955			0.849			0.546	
Satd. Flow (perm)	0	1686	0	0	1748	1583	0	1524	0	0	1021	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				213		10			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		642			1229			794			2690	
Travel Time (s)		14.6			27.9			18.0			61.1	
Confl. Peds. (#/hr)	12					12	10		10	10		10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	4%	0%	0%	4%	2%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	21	282	11	12	215	213	16	22	14	320	28	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	314	0	0	227	213	0	52	0	0	366	0
Turn Type	Perm	NA		Perm	NA	custom	Perm	NA		Perm	NA	
Protected Phases		2			6	7		8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6	7	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	16.0	16.0		16.0	16.0	16.0	14.0	14.0		14.0	14.0	
Total Split (s)	66.0	66.0		66.0	66.0	36.0	31.0	31.0		66.0	66.0	
Total Split (%)	40.5%	40.5%		40.5%	40.5%	22.1%	19.0%	19.0%		40.5%	40.5%	
Maximum Green (s)	60.0	60.0		60.0	60.0	30.0	25.0	25.0		60.0	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0			6.0	6.0		6.0			6.0	
Lead/Lag						Lead	Lag	Lag				
Lead-Lag Optimize?						Yes	Yes	Yes				
Vehicle Extension (s)	3.5	3.5		3.5	3.5	3.5	2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None	None	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effct Green (s)		28.7			28.7	21.7		35.5			60.1	
Actuated g/C Ratio		0.22			0.22	0.17		0.27			0.46	
v/c Ratio		0.85			0.59	0.49		0.12			0.78	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	18%
Maximum Green (s)	28.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	10.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings

11: Dickinson Street/Triangle Street & Main Street

Build Scenario 1
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		69.9			52.3	11.5		28.9			44.3	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		69.9			52.3	11.5		28.9			44.3	
LOS		E			D	B		C			D	
Approach Delay		69.9			32.5			28.9			44.3	
Approach LOS		E			C			C			D	
Queue Length 50th (ft)		256			174	0		24			255	
Queue Length 95th (ft)		366			258	80		64			#484	
Internal Link Dist (ft)		562			1149			714			2610	
Turn Bay Length (ft)						250						
Base Capacity (vph)		775			803	595		462			477	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.41			0.28	0.36		0.11			0.77	

Intersection Summary

Area Type: Other

Cycle Length: 163

Actuated Cycle Length: 130.9

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.85

Intersection Signal Delay: 46.0

Intersection LOS: D

Intersection Capacity Utilization 65.3%

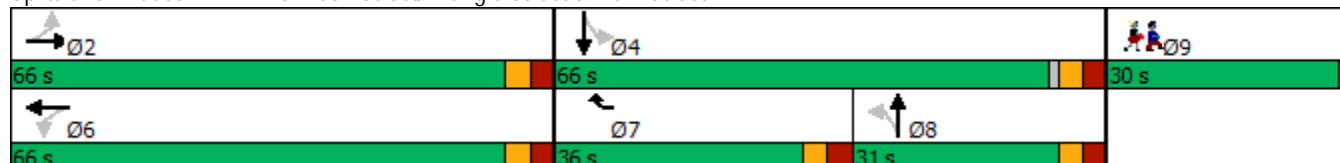
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.





















Splits and Phases: 11: Dickinson Street/Triangle Street & Main Street



Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
28: South East Street & College Street













Build Scenario 1
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	74	293	75	15	178	3	44	85	8	320	123	80
Future Volume (vph)	74	293	75	15	178	3	44	85	8	320	123	80
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	100		0	150		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99		0.99	1.00		1.00	1.00		0.99	0.99	
Frt		0.969			0.998			0.987			0.941	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	1793	0	1805	1877	0	1770	1790	0	1770	1694	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1700	1793	0	1784	1877	0	1765	1790	0	1759	1694	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6						2			16	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		879			332			445			264	
Travel Time (s)		20.0			7.5			10.1			6.0	
Confl. Peds. (#/hr)	8		6	6		8	1		2	2		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	1%	6%	0%	1%	0%	2%	5%	0%	2%	7%	1%
Adj. Flow (vph)	80	318	82	16	193	3	48	92	9	348	134	87
Shared Lane Traffic (%)												
Lane Group Flow (vph)	80	400	0	16	196	0	48	101	0	348	221	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		10.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	12.0		15.0	12.0		11.0	12.0		11.0	12.0	
Total Split (s)	35.0	56.0		35.0	56.0		35.0	56.0		35.0	56.0	
Total Split (%)	17.5%	28.0%		17.5%	28.0%		17.5%	28.0%		17.5%	28.0%	
Maximum Green (s)	30.0	50.0		30.0	50.0		30.0	50.0		30.0	50.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	10.5	32.7		10.2	22.2		8.3	11.7		30.7	36.9	
Actuated g/C Ratio	0.09	0.28		0.09	0.19		0.07	0.10		0.26	0.32	
v/c Ratio	0.51	0.79		0.10	0.55		0.38	0.55		0.74	0.40	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	9%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	6.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings
28: South East Street & College Street

Build Scenario 1
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	66.0	50.7		58.5	47.9		65.5	63.8		53.2	36.2	
Queue Delay	0.0	0.0		0.0	0.1		0.0	0.0		0.0	0.0	
Total Delay	66.0	50.7		58.5	47.9		65.5	63.8		53.2	36.2	
LOS	E	D		E	D		E	E		D	D	
Approach Delay		53.3			48.7			64.4			46.6	
Approach LOS		D			D			E			D	
Queue Length 50th (ft)	55	251		11	132		33	68		226	116	
Queue Length 95th (ft)	126	443		39	221		86	148		#505	249	
Internal Link Dist (ft)		799			252			365			184	
Turn Bay Length (ft)	250			100			150			200		
Base Capacity (vph)	459	794		477	827		468	790		468	756	
Starvation Cap Reductn	0	0		0	74		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.17	0.50		0.03	0.26		0.10	0.13		0.74	0.29	

Intersection Summary

Area Type: Other

Cycle Length: 200

Actuated Cycle Length: 116.1

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.79

Intersection Signal Delay: 51.1

Intersection LOS: D

Intersection Capacity Utilization 69.5%










ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.




Splits and Phases: 28: South East Street & College Street

 Ø1	 Ø2	 Ø3	 Ø4	 Ø9
35 s	56 s	35 s	56 s	18 s
 Ø5	 Ø6	 Ø7	 Ø8	
35 s	56 s	35 s	56 s	

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

HCM 6th TWSC
1: East Pleasant Street & Strong Street




Build Scenario 1
School Dismissal

Intersection						
Int Delay, s/veh	15.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	144	99	218	76	167	256
Future Vol, veh/h	144	99	218	76	167	256
Conflicting Peds, #/hr	23	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	7	4	12	4	2
Mvmt Flow	157	108	237	83	182	278
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	950	285	0	0	326	0
Stage 1	285	-	-	-	-	-
Stage 2	665	-	-	-	-	-
Critical Hdwy	6.46	6.27	-	-	4.14	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.363	-	-	2.236	-
Pot Cap-1 Maneuver	284	742	-	-	1222	-
Stage 1	754	-	-	-	-	-
Stage 2	504	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	227	738	-	-	1215	-
Mov Cap-2 Maneuver	227	-	-	-	-	-
Stage 1	749	-	-	-	-	-
Stage 2	406	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	54.6	0		3.3		
HCM LOS	F					
Minor Lane/Major Mvmt	NBT	NBRWBLn1		SBL	SBT	
Capacity (veh/h)	-	- 316		1215	-	
HCM Lane V/C Ratio	-	- 0.836		0.149	-	
HCM Control Delay (s)	-	- 54.6		8.5	0	
HCM Lane LOS	-	- F		A	A	
HCM 95th %tile Q(veh)	-	- 7.2		0.5	-	

HCM 6th TWSC

2: North East Street & Strong Street

Build Scenario 1
School Dismissal

Intersection						
Int Delay, s/veh	4					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	24	117	73	136	162	13
Future Vol, veh/h	24	117	73	136	162	13
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	3	7	7	1	10
Mvmt Flow	26	127	79	148	176	14
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	489	183	190	0	-	0
Stage 1	183	-	-	-	-	-
Stage 2	306	-	-	-	-	-
Critical Hdwy	6.4	6.23	4.17	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	2.263	-	-	-
Pot Cap-1 Maneuver	542	857	1354	-	-	-
Stage 1	853	-	-	-	-	-
Stage 2	751	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	507	857	1354	-	-	-
Mov Cap-2 Maneuver	507	-	-	-	-	-
Stage 1	798	-	-	-	-	-
Stage 2	751	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.9	2.7		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1354	-	767	-	-	
HCM Lane V/C Ratio	0.059	-	0.2	-	-	
HCM Control Delay (s)	7.8	0	10.9	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.7	-	-	

Intersection												
Int Delay, s/veh	2.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	509	36	23	358	9	28	10	26	8	9	20
Future Vol, veh/h	11	509	36	23	358	9	28	10	26	8	9	20
Conflicting Peds, #/hr	17	0	17	17	0	17	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	5	0	5	6	13	0	11	12	14	0	5
Mvmt Flow	12	553	39	25	389	10	30	11	28	9	10	22
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	416	0	0	609	0	0	1074	1080	590	1077	1094	411
Stage 1	-	-	-	-	-	-	614	614	-	461	461	-
Stage 2	-	-	-	-	-	-	460	466	-	616	633	-
Critical Hdwy	4.2	-	-	4.15	-	-	7.1	6.61	6.32	7.24	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.61	-	6.24	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.61	-	6.24	5.5	-
Follow-up Hdwy	2.29	-	-	2.245	-	-	3.5	4.099	3.408	3.626	4	3.345
Pot Cap-1 Maneuver	1101	-	-	955	-	-	199	210	489	186	216	634
Stage 1	-	-	-	-	-	-	483	469	-	558	569	-
Stage 2	-	-	-	-	-	-	585	547	-	458	476	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1083	-	-	940	-	-	175	193	481	158	199	624
Mov Cap-2 Maneuver	-	-	-	-	-	-	175	193	-	158	199	-
Stage 1	-	-	-	-	-	-	467	454	-	540	541	-
Stage 2	-	-	-	-	-	-	536	520	-	414	460	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.5			25.9			19.5		
HCM LOS							D			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	241	1083	-	-	940	-	-	289				
HCM Lane V/C Ratio	0.289	0.011	-	-	0.027	-	-	0.139				
HCM Control Delay (s)	25.9	8.4	0	-	8.9	0	-	19.5				
HCM Lane LOS	D	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	1.2	0	-	-	0.1	-	-	0.5				

Intersection

Int Delay, s/veh 0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Vol, veh/h	3	2	25	0	0	0	0	379	44	23	491	0
Future Vol, veh/h	3	2	25	0	0	0	0	379	44	23	491	0
Conflicting Peds, #/hr	1	0	0	0	0	1	4	0	1	1	0	4
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	4	2	2	2	2	4	10	32	3	0
Mvmt Flow	3	2	27	0	0	0	0	412	48	25	534	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1021	1045	534	-	0	0	461	0	0
Stage 1	584	584	-	-	-	-	-	-	-
Stage 2	437	461	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.24	-	-	-	4.42	-	-
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.336	-	-	-	2.488	-	-
Pot Cap-1 Maneuver	264	231	542	0	-	-	959	-	0
Stage 1	561	501	-	0	-	-	-	-	0
Stage 2	655	569	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	254	0	542	-	-	-	959	-	-
Mov Cap-2 Maneuver	254	0	-	-	-	-	-	-	-
Stage 1	561	0	-	-	-	-	-	-	-
Stage 2	631	0	-	-	-	-	-	-	-




Approach	EB	NB	SB
HCM Control Delay, s	13	0	0.4
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	483	959	-
HCM Lane V/C Ratio	-	-	0.068	0.026	-
HCM Control Delay (s)	-	-	13	8.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

HCM 6th TWSC
17: South East Street & Fort River Exit

Build Scenario 1
School Dismissal

Intersection						
Int Delay, s/veh	2.3					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	67	48	383	0	0	451
Future Vol, veh/h	67	48	383	0	0	451
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	11	4	2	2	4
Mvmt Flow	73	52	416	0	0	490
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	906	416	0	-	-	-
Stage 1	416	-	-	-	-	-
Stage 2	490	-	-	-	-	-
Critical Hdwy	6.45	6.31	-	-	-	-
Critical Hdwy Stg 1	5.45	-	-	-	-	-
Critical Hdwy Stg 2	5.45	-	-	-	-	-
Follow-up Hdwy	3.545	3.399	-	-	-	-
Pot Cap-1 Maneuver	303	618	-	0	0	-
Stage 1	659	-	-	0	0	-
Stage 2	610	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	303	618	-	-	-	-
Mov Cap-2 Maneuver	303	-	-	-	-	-
Stage 1	659	-	-	-	-	-
Stage 2	610	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	18.8	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 385		-			
HCM Lane V/C Ratio	- 0.325		-			
HCM Control Delay (s)	- 18.8		-			
HCM Lane LOS	- C		-			
HCM 95th %tile Q(veh)	- 1.4		-			

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	160	19	3	97	4	2
Future Vol, veh/h	160	19	3	97	4	2
Conflicting Peds, #/hr	0	1	1	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	11	50	11	33	0
Mvmt Flow	174	21	3	105	4	2

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	196
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.6
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.65
Pot Cap-1 Maneuver	-	-	1136
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1135
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	10.3
HCM LOS			B




Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	691	-	-	1135	-
HCM Lane V/C Ratio	0.009	-	-	0.003	-
HCM Control Delay (s)	10.3	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 6th TWSC
21: Red Gate Lane & Strong Street

Build Scenario 1
School Dismissal

Intersection

Int Delay, s/veh 0.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	148	7	5	91	8	7
Future Vol, veh/h	148	7	5	91	8	7
Conflicting Peds, #/hr	0	2	2	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	17	50	3	14	0
Mvmt Flow	161	8	5	99	9	8




Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	171
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.6
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.65
Pot Cap-1 Maneuver	-	-	1162
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1160
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	762	-	-	1160	-
HCM Lane V/C Ratio	0.021	-	-	0.005	-
HCM Control Delay (s)	9.8	-	-	8.1	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 6th TWSC
26: East Pleasant Street & Clark Hill Road

Build Scenario 1
School Dismissal

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	69	33	280	361	14
Future Vol, veh/h	14	69	33	280	361	14
Conflicting Peds, #/hr	0	0	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	5	10	4	3	0
Mvmt Flow	15	75	36	304	392	15
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	778	402	409	0	-	0
Stage 1	402	-	-	-	-	-
Stage 2	376	-	-	-	-	-
Critical Hdwy	6.48	6.25	4.2	-	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.345	2.29	-	-	-
Pot Cap-1 Maneuver	357	642	1108	-	-	-
Stage 1	663	-	-	-	-	-
Stage 2	681	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	342	641	1106	-	-	-
Mov Cap-2 Maneuver	342	-	-	-	-	-
Stage 1	636	-	-	-	-	-
Stage 2	680	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.7	0.9		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1106	-	559	-	-	
HCM Lane V/C Ratio	0.032	-	0.161	-	-	
HCM Control Delay (s)	8.4	0	12.7	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-	




HCM 6th TWSC
32: South East Street & Belchertwon Road

Build Scenario 1
School Dismissal

Intersection						
Int Delay, s/veh	2.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	↔		↑			↑
Traffic Vol, veh/h	6	239	157	0	0	522
Future Vol, veh/h	6	239	157	0	0	522
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	95	92	92	92	92
Heavy Vehicles, %	0	6	5	0	0	7
Mvmt Flow	7	252	171	0	0	567
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	738	171	0	-	-	-
Stage 1	171	-	-	-	-	-
Stage 2	567	-	-	-	-	-
Critical Hdwy	6.4	6.26	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.354	-	-	-	-
Pot Cap-1 Maneuver	388	862	-	0	0	-
Stage 1	864	-	-	0	0	-
Stage 2	572	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	388	862	-	-	-	-
Mov Cap-2 Maneuver	388	-	-	-	-	-
Stage 1	864	-	-	-	-	-
Stage 2	572	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11.2	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 836		-			
HCM Lane V/C Ratio	- 0.309		-			
HCM Control Delay (s)	- 11.2		-			
HCM Lane LOS	- B		-			
HCM 95th %tile Q(veh)	- 1.3		-			

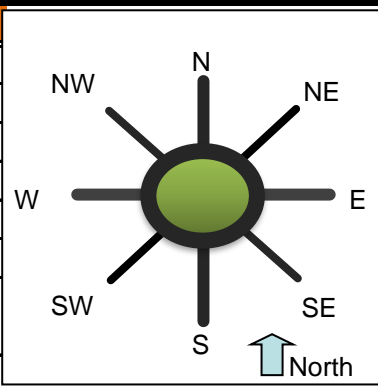
HCM 6th TWSC
33: Wildwood Driveway & Strong Street

Build Scenario 1
School Dismissal

Intersection						
Int Delay, s/veh	5.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	131	117	26	76	167	43
Future Vol, veh/h	131	117	26	76	167	43
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	5	2	0	9	4
Mvmt Flow	142	127	28	83	182	47
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	269	0	345	206
Stage 1	-	-	-	-	206	-
Stage 2	-	-	-	-	139	-
Critical Hdwy	-	-	4.12	-	6.49	6.24
Critical Hdwy Stg 1	-	-	-	-	5.49	-
Critical Hdwy Stg 2	-	-	-	-	5.49	-
Follow-up Hdwy	-	-	2.218	-	3.581	3.336
Pot Cap-1 Maneuver	-	-	1295	-	638	829
Stage 1	-	-	-	-	812	-
Stage 2	-	-	-	-	871	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1295	-	623	829
Mov Cap-2 Maneuver	-	-	-	-	623	-
Stage 1	-	-	-	-	812	-
Stage 2	-	-	-	-	851	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		2		13.4	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	656	-	-	1295	-	
HCM Lane V/C Ratio	0.348	-	-	0.022	-	
HCM Control Delay (s)	13.4	-	-	7.8	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	1.6	-	-	0.1	-	

General & Site Information v 4.2

Analyst: Eric Beaudry
Agency/Co: Pare Corporation
Date: 4/28/2022
Project or PI#: 21245.00 Amherst Elementary Schools
Year, Peak Hour: Build Scenario 1 School Dismissal
County/District: Amherst, MA
Intersection Name: East Pleasant Street at Triangle Street



Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			94		190		51	
	NE (2), vph								
	E (3), vph	47				46		233	
	SE (4), vph								
	S (5), vph	289		45				187	
	SW (6), vph								
	W (7), vph	72		187		141			
	NW (8), vph								
Output	Total Vehicles	408	0	326	0	377	0	471	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	99.0%	100.0%	99.0%	100.0%	94.0%	100.0%	95.0%	100.0%
% Heavy Vehicles	1.0%	0.0%	1.0%	0.0%	6.0%	0.0%	5.0%	0.0%
% Bicycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.92	0.95	0.92	0.95	0.92	0.95	0.92	0.95
F _{HV}	0.990	1.000	0.990	1.000	0.943	1.000	0.952	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	103	0	219	0	58	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	52	0	0	0	53	0	266	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	317	0	49	0	0	0	213	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	79	0	205	0	162	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	448	0	358	0	434	0	538	0
Conflicting flow, pcu/h	417	0	440	0	376	0	418	0

Results: Approach Measures of Effectiveness

HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	893	NA	873	NA	887	NA	858	NA
Entry Flow Rates, vph	443	0	354	0	410	0	512	0
V/C ratio	0.50		0.41		0.46		0.60	
Control Delay, sec/pcu	10.4		8.9		9.8		13.2	
LOS	B		A		A		B	
Average Queue (ft)	32		22		28		47	
95th % Queue (ft)	71		50		65		107	



















Overall Intersection Measures of Effectiveness

Int Control Delay (sec)	10.8	Int LOS	B	Max Approach V/C	0.60
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Notes: v 4.2

Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

Build Scenario 2
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	40	190	196	57	139	34	220	207	79	51	229	27
Future Volume (vph)	40	190	196	57	139	34	220	207	79	51	229	27
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	100		0	0		0
Storage Lanes	0		1	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	0.97		0.99		1.00	0.99			1.00	
Frt			0.850		0.980			0.959			0.988	
Flt Protected		0.991			0.988		0.950				0.992	
Satd. Flow (prot)	0	1852	1524	0	1754	0	1703	1715	0	0	1824	0
Flt Permitted		0.892			0.728		0.487				0.897	
Satd. Flow (perm)	0	1665	1475	0	1290	0	869	1715	0	0	1647	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			213		12			25			6	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2205			457			209			3887	
Travel Time (s)		50.1			10.4			4.8			88.3	
Confl. Peds. (#/hr)	10		8	8		10	5		11	11		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	2%	6%	0%	4%	13%	6%	6%	3%	2%	2%	0%
Adj. Flow (vph)	43	207	213	62	151	37	239	225	86	55	249	29
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	250	213	0	250	0	239	311	0	0	333	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0		11.0	11.0		11.0	11.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0		29.0	29.0		29.0	29.0	
Total Split (%)	39.7%	39.7%	39.7%	39.7%	39.7%		37.2%	37.2%		37.2%	37.2%	
Maximum Green (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		15.7	15.7		15.7		23.6	23.6			23.6	
Actuated g/C Ratio		0.23	0.23		0.23		0.35	0.35			0.35	
v/c Ratio		0.65	0.42		0.81		0.79	0.50			0.57	













Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

Build Scenario 2
School Dismissal

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	23%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effect Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

Build Scenario 2
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		31.5	6.1		43.7		42.7	20.4			23.4	
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	
Total Delay		31.5	6.1		43.7		42.7	20.4			23.4	
LOS		C	A		D		D	C			C	
Approach Delay		19.8			43.7			30.1			23.4	
Approach LOS		B			D			C			C	
Queue Length 50th (ft)		94	0		94		86	90			107	
Queue Length 95th (ft)		161	45		170		#234	186			215	
Internal Link Dist (ft)		2125			377			129			3807	
Turn Bay Length (ft)			200				100					
Base Capacity (vph)		645	702		507		310	629			592	
Starvation Cap Reductn		0	0		0		0	0			0	
Spillback Cap Reductn		0	0		0		0	0			0	
Storage Cap Reductn		0	0		0		0	0			0	
Reduced v/c Ratio		0.39	0.30		0.49		0.77	0.49			0.56	

Intersection Summary

Area Type: Other

Cycle Length: 78

Actuated Cycle Length: 67.5

Natural Cycle: 65

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.81

Intersection Signal Delay: 27.8

Intersection LOS: C

Intersection Capacity Utilization 74.1%






ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: South East Street/North East Street & Main Street


















 Ø2	 Ø4	 Ø9
31 s	29 s	18 s
 Ø6	 Ø8	
31 s	29 s	

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

11: Dickinson Street/Triangle Street & Main Street













Build Scenario 2
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	19	236	10	11	213	207	15	20	13	300	26	17
Future Volume (vph)	19	236	10	11	213	207	15	20	13	300	26	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00						0.98			0.99	
Frt		0.995				0.850		0.964			0.993	
Flt Protected		0.996			0.998			0.985			0.958	
Satd. Flow (prot)	0	1811	0	0	1827	1583	0	1779	0	0	1805	0
Flt Permitted		0.842			0.959			0.848			0.546	
Satd. Flow (perm)	0	1529	0	0	1755	1583	0	1522	0	0	1021	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		1				225		10			2	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		642			1229			794			2690	
Travel Time (s)		14.6			27.9			18.0			61.1	
Confl. Peds. (#/hr)	12					12	10		10	10		10
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	6%	4%	0%	0%	4%	2%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	21	257	11	12	232	225	16	22	14	326	28	18
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	289	0	0	244	225	0	52	0	0	372	0
Turn Type	Perm	NA		Perm	NA	custom	Perm	NA		Perm	NA	
Protected Phases		2			6	7		8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6	7	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	10.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	16.0	16.0		16.0	16.0	16.0	14.0	14.0		14.0	14.0	
Total Split (s)	66.0	66.0		66.0	66.0	36.0	31.0	31.0		66.0	66.0	
Total Split (%)	40.5%	40.5%		40.5%	40.5%	22.1%	19.0%	19.0%		40.5%	40.5%	
Maximum Green (s)	60.0	60.0		60.0	60.0	30.0	25.0	25.0		60.0	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0			6.0	6.0		6.0			6.0	
Lead/Lag						Lead	Lag	Lag				
Lead-Lag Optimize?						Yes	Yes	Yes				
Vehicle Extension (s)	3.5	3.5		3.5	3.5	3.5	2.0	2.0		2.0	2.0	
Recall Mode	None	None		None	None	None	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		26.6			26.6	21.6		35.5			60.1	
Actuated g/C Ratio		0.21			0.21	0.17		0.28			0.47	
v/c Ratio		0.91			0.68	0.50		0.12			0.78	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	18%
Maximum Green (s)	28.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	10.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	0
Act Effect Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings
11: Dickinson Street/Triangle Street & Main Street

Build Scenario 2
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		82.8			56.7	11.2		28.0			43.1	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		82.8			56.7	11.2		28.0			43.1	
LOS		F			E	B		C			D	
Approach Delay		82.8			34.9			28.0			43.1	
Approach LOS		F			C			C			D	
Queue Length 50th (ft)		237			189	0		24			253	
Queue Length 95th (ft)		347			279	81		63			#481	
Internal Link Dist (ft)		562			1149			714			2610	
Turn Bay Length (ft)						250						
Base Capacity (vph)		714			819	609		469			485	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.40			0.30	0.37		0.11			0.77	

Intersection Summary

Area Type: Other

Cycle Length: 163

Actuated Cycle Length: 128.8

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.91

Intersection Signal Delay: 48.9

Intersection LOS: D

Intersection Capacity Utilization 64.5%

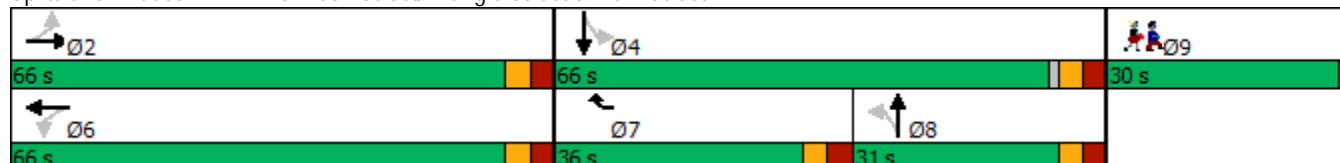
ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.





















Splits and Phases: 11: Dickinson Street/Triangle Street & Main Street



Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
28: South East Street & College Street













Build Scenario 2
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	82	265	65	15	178	3	44	92	8	320	123	87
Future Volume (vph)	82	265	65	15	178	3	44	92	8	320	123	87
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	100		0	150		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.98	0.99		0.99	1.00		1.00	1.00		0.99	0.99	
Frt		0.970			0.998			0.988			0.938	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1736	1796	0	1805	1877	0	1770	1791	0	1770	1690	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1700	1796	0	1783	1877	0	1765	1791	0	1759	1690	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		6						2			17	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		879			332			445			264	
Travel Time (s)		20.0			7.5			10.1			6.0	
Confl. Peds. (#/hr)	8		6	6		8	1		2	2		1
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	1%	6%	0%	1%	0%	2%	5%	0%	2%	7%	1%
Adj. Flow (vph)	89	288	71	16	193	3	48	100	9	348	134	95
Shared Lane Traffic (%)												
Lane Group Flow (vph)	89	359	0	16	196	0	48	109	0	348	229	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		10.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	12.0		15.0	12.0		11.0	12.0		11.0	12.0	
Total Split (s)	35.0	56.0		35.0	56.0		35.0	56.0		35.0	56.0	
Total Split (%)	17.5%	28.0%		17.5%	28.0%		17.5%	28.0%		17.5%	28.0%	
Maximum Green (s)	30.0	50.0		30.0	50.0		30.0	50.0		30.0	50.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	10.9	30.7		10.2	19.9		8.2	12.1		30.6	37.1	
Actuated g/C Ratio	0.10	0.27		0.09	0.17		0.07	0.11		0.27	0.32	
v/c Ratio	0.54	0.74		0.10	0.60		0.38	0.57		0.74	0.41	

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	9%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	6.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings
28: South East Street & College Street

Build Scenario 2
School Dismissal

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	64.4	48.8		56.5	51.7		63.8	62.4		51.5	34.6	
Queue Delay	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Delay	64.4	48.8		56.5	51.8		63.8	62.4		51.5	34.6	
LOS	E	D		E	D		E	E		D	C	
Approach Delay		51.9			52.1			62.8			44.8	
Approach LOS		D			D			E			D	
Queue Length 50th (ft)	60	219		11	133		33	72		222	118	
Queue Length 95th (ft)	132	397		39	227		84	153		#485	246	
Internal Link Dist (ft)		799			252			365			184	
Turn Bay Length (ft)	250			100			150			200		
Base Capacity (vph)	464	804		483	837		473	800		473	763	
Starvation Cap Reductn	0	0		0	55		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.19	0.45		0.03	0.25		0.10	0.14		0.74	0.30	

Intersection Summary

Area Type: Other

Cycle Length: 200

Actuated Cycle Length: 114.2

Natural Cycle: 90

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 50.2

Intersection LOS: D

Intersection Capacity Utilization 67.8%










ICU Level of Service C

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.




Splits and Phases: 28: South East Street & College Street

 Ø1	 Ø2	 Ø3	 Ø4	 Ø9
35 s	56 s	35 s	56 s	18 s
 Ø5	 Ø6	 Ø7	 Ø8	
35 s	56 s	35 s	56 s	

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

HCM 6th TWSC
1: East Pleasant Street & Strong Street




Build Scenario 2
School Dismissal

Intersection						
Int Delay, s/veh	5.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	71	111	218	61	147	256
Future Vol, veh/h	71	111	218	61	147	256
Conflicting Peds, #/hr	23	0	0	6	6	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	7	4	12	4	2
Mvmt Flow	77	121	237	66	160	278
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	897	276	0	0	309	0
Stage 1	276	-	-	-	-	-
Stage 2	621	-	-	-	-	-
Critical Hdwy	6.46	6.27	-	-	4.14	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.363	-	-	2.236	-
Pot Cap-1 Maneuver	305	751	-	-	1240	-
Stage 1	761	-	-	-	-	-
Stage 2	528	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	251	747	-	-	1233	-
Mov Cap-2 Maneuver	251	-	-	-	-	-
Stage 1	756	-	-	-	-	-
Stage 2	437	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	20.8	0		3		
HCM LOS	C					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	422	1233	-
HCM Lane V/C Ratio		-	-	0.469	0.13	-
HCM Control Delay (s)		-	-	20.8	8.4	0
HCM Lane LOS		-	-	C	A	A
HCM 95th %tile Q(veh)		-	-	2.4	0.4	-





HCM 6th TWSC

2: North East Street & Strong Street




Build Scenario 2
School Dismissal

Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	9	119	88	161	168	11
Future Vol, veh/h	9	119	88	161	168	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	3	7	7	1	10
Mvmt Flow	10	129	96	175	183	12
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	556	189	195	0	-	0
Stage 1	189	-	-	-	-	-
Stage 2	367	-	-	-	-	-
Critical Hdwy	6.4	6.23	4.17	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.327	2.263	-	-	-
Pot Cap-1 Maneuver	496	850	1349	-	-	-
Stage 1	848	-	-	-	-	-
Stage 2	705	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	457	850	1349	-	-	-
Mov Cap-2 Maneuver	457	-	-	-	-	-
Stage 1	781	-	-	-	-	-
Stage 2	705	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.4	2.8		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1349	-	802	-	-	
HCM Lane V/C Ratio	0.071	-	0.173	-	-	
HCM Control Delay (s)	7.9	0	10.4	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.6	-	-	

Intersection												
Int Delay, s/veh	2.7											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	11	493	35	23	356	14	28	15	26	8	9	20
Future Vol, veh/h	11	493	35	23	356	14	28	15	26	8	9	20
Conflicting Peds, #/hr	17	0	17	17	0	17	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	10	5	0	5	6	13	0	11	12	14	0	5
Mvmt Flow	12	536	38	25	387	15	30	16	28	9	10	22
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	419	0	0	591	0	0	1057	1065	572	1063	1077	412
Stage 1	-	-	-	-	-	-	596	596	-	462	462	-
Stage 2	-	-	-	-	-	-	461	469	-	601	615	-
Critical Hdwy	4.2	-	-	4.15	-	-	7.1	6.61	6.32	7.24	6.5	6.25
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.61	-	6.24	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.61	-	6.24	5.5	-
Follow-up Hdwy	2.29	-	-	2.245	-	-	3.5	4.099	3.408	3.626	4	3.345
Pot Cap-1 Maneuver	1098	-	-	970	-	-	205	214	501	191	221	633
Stage 1	-	-	-	-	-	-	494	478	-	557	568	-
Stage 2	-	-	-	-	-	-	584	546	-	467	485	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1080	-	-	954	-	-	180	197	493	160	203	623
Mov Cap-2 Maneuver	-	-	-	-	-	-	180	197	-	160	203	-
Stage 1	-	-	-	-	-	-	478	463	-	539	540	-
Stage 2	-	-	-	-	-	-	535	519	-	418	469	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.2			0.5			26.3			19.2		
HCM LOS							D			C		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	243	1080	-	-	954	-	-	293				
HCM Lane V/C Ratio	0.309	0.011	-	-	0.026	-	-	0.137				
HCM Control Delay (s)	26.3	8.4	0	-	8.9	0	-	19.2				
HCM Lane LOS	D	A	A	-	A	A	-	C				
HCM 95th %tile Q(veh)	1.3	0	-	-	0.1	-	-	0.5				

Intersection												
Int Delay, s/veh	3.3											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	3	2	25	74	0	0	0	368	90	23	515	0
Future Vol, veh/h	3	2	25	74	0	0	0	368	90	23	515	0
Conflicting Peds, #/hr	1	0	0	0	0	1	4	0	1	1	0	4
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	0	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	4	2	2	2	2	4	10	32	3	0
Mvmt Flow	3	2	27	80	0	0	0	400	98	25	560	0
Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	1060	1109	560	1075	-	-	-	0	0	499	0	0
Stage 1	610	610	-	450	-	-	-	-	-	-	-	-
Stage 2	450	499	-	625	-	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.5	6.24	7.12	-	-	-	-	-	4.42	-	-
Critical Hdwy Stg 1	6.1	5.5	-	6.12	-	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.5	-	6.12	-	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.336	3.518	-	-	-	-	-	2.488	-	-
Pot Cap-1 Maneuver	204	211	524	197	0	0	0	-	-	927	-	0
Stage 1	485	488	-	589	0	0	0	-	-	-	-	0
Stage 2	592	547	-	473	0	0	0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	198	203	524	180	-	-	-	-	-	926	-	-
Mov Cap-2 Maneuver	198	203	-	180	-	-	-	-	-	-	-	-
Stage 1	485	469	-	589	-	-	-	-	-	-	-	-
Stage 2	591	546	-	429	-	-	-	-	-	-	-	-
Approach	EB		WB		NB			SB				
HCM Control Delay, s	14.5		40.2		0			0.4				
HCM LOS	B		E									
Minor Lane/Major Mvmt	NBT		NBR		EBLn1WBLn1		SBL	SBT				
Capacity (veh/h)	-		-		413		180	926				
HCM Lane V/C Ratio	-		-		0.079		0.447	0.027				
HCM Control Delay (s)	-		-		14.5		40.2	9				
HCM Lane LOS	-		-		B		E	A				
HCM 95th %tile Q(veh)	-		-		0.3		2.1	0.1				

Intersection						
Int Delay, s/veh	1.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations		↗	↖			↖
Traffic Vol, veh/h	0	132	372	0	0	475
Future Vol, veh/h	0	132	372	0	0	475
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	5	11	4	2	2	4
Mvmt Flow	0	143	404	0	0	516
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	-	404	0	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	6.31	-	-	-	-
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	3.399	-	-	-	-
Pot Cap-1 Maneuver	0	628	-	0	0	-
Stage 1	0	-	-	0	0	-
Stage 2	0	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	-	628	-	-	-	-
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.4	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 628		-			
HCM Lane V/C Ratio	- 0.228		-			
HCM Control Delay (s)	- 12.4		-			
HCM Lane LOS	- B		-			
HCM 95th %tile Q(veh)	- 0.9		-			




Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	147	19	3	109	4	2
Future Vol, veh/h	147	19	3	109	4	2
Conflicting Peds, #/hr	0	1	1	0	1	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	11	50	11	33	0
Mvmt Flow	160	21	3	118	4	2
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	182	0	297	173
Stage 1	-	-	-	-	172	-
Stage 2	-	-	-	-	125	-
Critical Hdwy	-	-	4.6	-	6.73	6.2
Critical Hdwy Stg 1	-	-	-	-	5.73	-
Critical Hdwy Stg 2	-	-	-	-	5.73	-
Follow-up Hdwy	-	-	2.65	-	3.797	3.3
Pot Cap-1 Maneuver	-	-	1150	-	634	876
Stage 1	-	-	-	-	788	-
Stage 2	-	-	-	-	829	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1149	-	631	874
Mov Cap-2 Maneuver	-	-	-	-	631	-
Stage 1	-	-	-	-	787	-
Stage 2	-	-	-	-	826	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		10.2	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	695	-	-	1149	-	
HCM Lane V/C Ratio	0.009	-	-	0.003	-	
HCM Control Delay (s)	10.2	-	-	8.1	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th TWSC
21: Red Gate Lane & Strong Street

Build Scenario 2
School Dismissal

Intersection




Int Delay, s/veh 0.7




Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	135	7	5	103	8	7
Future Vol, veh/h	135	7	5	103	8	7
Conflicting Peds, #/hr	0	2	2	0	0	2
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	17	50	3	14	0
Mvmt Flow	147	8	5	112	9	8

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	157
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.6
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.65
Pot Cap-1 Maneuver	-	-	1177
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1175
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	9.8
HCM LOS			A




Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	769	-	-	1175	-
HCM Lane V/C Ratio	0.021	-	-	0.005	-
HCM Control Delay (s)	9.8	-	-	8.1	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection						
Int Delay, s/veh	1.7					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	69	33	292	333	14
Future Vol, veh/h	14	69	33	292	333	14
Conflicting Peds, #/hr	0	0	2	0	0	2
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	8	5	10	4	3	0
Mvmt Flow	15	75	36	317	362	15
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	761	372	379	0	-	0
Stage 1	372	-	-	-	-	-
Stage 2	389	-	-	-	-	-
Critical Hdwy	6.48	6.25	4.2	-	-	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.345	2.29	-	-	-
Pot Cap-1 Maneuver	365	667	1137	-	-	-
Stage 1	684	-	-	-	-	-
Stage 2	672	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	349	666	1135	-	-	-
Mov Cap-2 Maneuver	349	-	-	-	-	-
Stage 1	656	-	-	-	-	-
Stage 2	671	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	12.4	0.8		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1135	-	578	-	-	
HCM Lane V/C Ratio	0.032	-	0.156	-	-	
HCM Control Delay (s)	8.3	0	12.4	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.6	-	-	

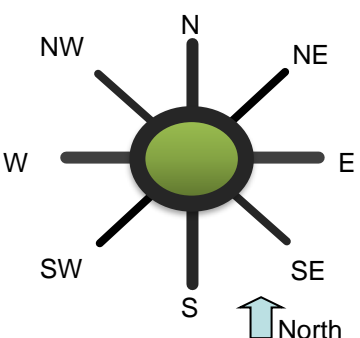
Intersection						
Int Delay, s/veh	3.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	6	259	157	0	0	522
Future Vol, veh/h	6	259	157	0	0	522
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	95	92	92	92	92
Heavy Vehicles, %	0	6	5	0	0	7
Mvmt Flow	7	273	171	0	0	567
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	738	171	0	-	-	-
Stage 1	171	-	-	-	-	-
Stage 2	567	-	-	-	-	-
Critical Hdwy	6.4	6.26	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.354	-	-	-	-
Pot Cap-1 Maneuver	388	862	-	0	0	-
Stage 1	864	-	-	0	0	-
Stage 2	572	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	388	862	-	-	-	-
Mov Cap-2 Maneuver	388	-	-	-	-	-
Stage 1	864	-	-	-	-	-
Stage 2	572	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	11.4	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 838		-			
HCM Lane V/C Ratio	- 0.333		-			
HCM Control Delay (s)	- 11.4		-			
HCM Lane LOS	- B		-			
HCM 95th %tile Q(veh)	- 1.5		-			

HCM 6th TWSC
33: Wildwood Driveway & Strong Street

Build Scenario 2
School Dismissal

Intersection						
Int Delay, s/veh	3.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	136	68	15	99	84	25
Future Vol, veh/h	136	68	15	99	84	25
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	5	2	0	9	4
Mvmt Flow	148	74	16	108	91	27
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	222	0	325	185
Stage 1	-	-	-	-	185	-
Stage 2	-	-	-	-	140	-
Critical Hdwy	-	-	4.12	-	6.49	6.24
Critical Hdwy Stg 1	-	-	-	-	5.49	-
Critical Hdwy Stg 2	-	-	-	-	5.49	-
Follow-up Hdwy	-	-	2.218	-	3.581	3.336
Pot Cap-1 Maneuver	-	-	1347	-	655	852
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	870	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1347	-	646	852
Mov Cap-2 Maneuver	-	-	-	-	646	-
Stage 1	-	-	-	-	830	-
Stage 2	-	-	-	-	859	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		1		11.4	
HCM LOS	B					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	684	-	-	1347	-	
HCM Lane V/C Ratio	0.173	-	-	0.012	-	
HCM Control Delay (s)	11.4	-	-	7.7	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.6	-	-	0	-	

General & Site Information v 4.2								
Analyst:		Eric Beaudry						
Agency/Co:		Pare Corporation						
Date:		4/28/2022						
Project or PI#:		21245.00 Amherst Elementary Schools						
Year, Peak Hour:		Build Scenario 2 School Dismissal						
County/District:		Amherst, MA						
Intersection Name:		East Pleasant Street at Triangle Street						



North

Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			96		187		49	
	NE (2), vph								
	E (3), vph	44				47		237	
	SE (4), vph								
	S (5), vph	220		45				187	
	SW (6), vph								
	W (7), vph	72		187		141			
	NW (8), vph								
Output	Total Vehicles	336	0	328	0	375	0	473	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	99.0%	100.0%	99.0%	100.0%	94.0%	100.0%	95.0%	100.0%
% Heavy Vehicles	1.0%	0.0%	1.0%	0.0%	6.0%	0.0%	5.0%	0.0%
% Bicycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.92	0.95	0.92	0.95	0.92	0.95	0.92	0.95
F _{HV}	0.990	1.000	0.990	1.000	0.943	1.000	0.952	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	105	0	215	0	56	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	48	0	0	0	54	0	270	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	242	0	49	0	0	0	213	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	79	0	205	0	162	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	369	0	360	0	432	0	540	0
Conflicting flow, pcu/h	417	0	434	0	375	0	339	0

Results: Approach Measures of Effectiveness

HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	893	NA	878	NA	888	NA	930	NA
Entry Flow Rates, vph	365	0	357	0	408	0	514	0
V/C ratio	0.41		0.41		0.46		0.55	
Control Delay, sec/pcu	8.8		8.9		9.7		11.3	
LOS	A		A		A		B	
Average Queue (ft)	22		22		28		40	
95th % Queue (ft)	51		50		65		91	



















Overall Intersection Measures of Effectiveness

Int Control Delay (sec)	9.9	Int LOS	A	Max Approach V/C	0.55
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Notes: v 4.2

Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

Existing
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	56	248	245	66	171	38	203	180	98	50	253	33
Future Volume (vph)	56	248	245	66	171	38	203	180	98	50	253	33
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	100		0	0		0
Storage Lanes	0		1	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	0.97		0.99		1.00	0.99			1.00	
Frt			0.850		0.981			0.947			0.987	
Flt Protected		0.991			0.988		0.950				0.993	
Satd. Flow (prot)	0	1715	1615	0	1707	0	1805	1767	0	0	1852	0
Flt Permitted		0.858			0.665		0.419				0.844	
Satd. Flow (perm)	0	1484	1564	0	1147	0	793	1767	0	0	1572	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			266		11			36			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2205			457			209			3887	
Travel Time (s)		50.1			10.4			4.8			88.3	
Confl. Peds. (#/hr)	4		8	8		4	5		7	7		5
Peak Hour Factor	0.92	0.92	0.92	0.82	0.82	0.82	0.87	0.87	0.87	0.91	0.91	0.91
Heavy Vehicles (%)	0%	12%	0%	8%	9%	0%	0%	0%	2%	0%	0%	3%
Adj. Flow (vph)	61	270	266	80	209	46	233	207	113	55	278	36
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	331	266	0	335	0	233	320	0	0	369	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0		11.0	11.0		11.0	11.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0		29.0	29.0		29.0	29.0	
Total Split (%)	39.7%	39.7%	39.7%	39.7%	39.7%		37.2%	37.2%		37.2%	37.2%	
Maximum Green (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		23.0	23.0		23.0		24.1	24.1			24.1	
Actuated g/C Ratio		0.31	0.31		0.31		0.32	0.32			0.32	
v/c Ratio		0.73	0.40		0.94		0.92	0.54			0.73	













Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

Existing
PM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	23%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

Existing
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		33.6	4.7		60.5		68.5	23.4			33.2	
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	
Total Delay		33.6	4.7		60.5		68.5	23.4			33.2	
LOS		C	A		E		E	C			C	
Approach Delay		20.7			60.5			42.4			33.2	
Approach LOS		C			E			D			C	
Queue Length 50th (ft)		136	0		146		110	114			157	
Queue Length 95th (ft)		227	48		#253		#236	184			#288	
Internal Link Dist (ft)		2125			377			129			3807	
Turn Bay Length (ft)			200				100					
Base Capacity (vph)		515	716		405		254	590			508	
Starvation Cap Reductn		0	0		0		0	0			0	
Spillback Cap Reductn		0	0		0		0	0			0	
Storage Cap Reductn		0	0		0		0	0			0	
Reduced v/c Ratio		0.64	0.37		0.83		0.92	0.54			0.73	

Intersection Summary

Area Type: Other

Cycle Length: 78

Actuated Cycle Length: 75.1

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 36.9

Intersection LOS: D

Intersection Capacity Utilization 81.7%






ICU Level of Service D

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: South East Street/North East Street & Main Street

 Ø2	 Ø4	 Ø9
31 s	29 s	18 s
 Ø6	 Ø8	
31 s	29 s	

Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street


















Existing
PM Peak

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

11: Dickinson Street/Triangle Street & Main Street

Existing
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	24	249	3	5	220	246	7	26	25	397	23	17
Future Volume (vph)	24	249	3	5	220	246	7	26	25	397	23	17
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.95			0.98	
Frt		0.999				0.850		0.942			0.995	
Flt Protected		0.996			0.999			0.994			0.956	
Satd. Flow (prot)	0	1851	0	0	1862	1615	0	1700	0	0	1805	0
Flt Permitted		0.862			0.992			0.924			0.440	
Satd. Flow (perm)	0	1602	0	0	1849	1615	0	1577	0	0	815	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						262		20			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		642			1225			796			2686	
Travel Time (s)		14.6			27.8			18.1			61.0	
Confl. Peds. (#/hr)							11		26	26		11
Peak Hour Factor	0.75	0.75	0.75	0.94	0.94	0.94	0.81	0.81	0.81	0.84	0.84	0.84
Heavy Vehicles (%)	4%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	32	332	4	5	234	262	9	32	31	473	27	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	368	0	0	239	262	0	72	0	0	520	0
Turn Type	Perm	NA		Perm	NA	custom	Perm	NA		Perm	NA	
Protected Phases		2			6	7		8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6	7	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	16.0	16.0		16.0	16.0	14.0	14.0	14.0		14.0	14.0	
Total Split (s)	66.0	66.0		66.0	66.0	36.0	31.0	31.0		66.0	66.0	
Total Split (%)	40.5%	40.5%		40.5%	40.5%	22.1%	19.0%	19.0%		40.5%	40.5%	
Maximum Green (s)	60.0	60.0		60.0	60.0	30.0	25.0	25.0		60.0	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0			6.0	6.0		6.0			6.0	
Lead/Lag						Lead	Lag	Lag				
Lead-Lag Optimize?						Yes	Yes	Yes				
Vehicle Extension (s)	3.5	3.5		3.5	3.5	3.5	2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		33.7			33.7	21.3		35.9			60.2	
Actuated g/C Ratio		0.25			0.25	0.16		0.26			0.44	
v/c Ratio		0.93			0.52	0.55		0.17			1.44	













Lanes, Volumes, Timings
11: Dickinson Street/Triangle Street & Main Street

Existing
PM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	18%
Maximum Green (s)	28.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	10.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings 11: Dickinson Street/Triangle Street & Main Street

Existing
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		80.3			48.0	11.7		28.1			244.8	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		80.3			48.0	11.7		28.1			244.8	
LOS		F			D	B		C			F	
Approach Delay		80.3			29.0			28.1			244.8	
Approach LOS		F			C			C			F	
Queue Length 50th (ft)		319			183	0		31			~623	
Queue Length 95th (ft)		346			266	89		73			#862	
Internal Link Dist (ft)		562			1145			716			2606	
Turn Bay Length (ft)						250						
Base Capacity (vph)		709			818	625		473			367	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.52			0.29	0.42		0.15			1.42	

Intersection Summary

Area Type: Other

Cycle Length: 163

Actuated Cycle Length: 136

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.44

Intersection Signal Delay: 118.7

Intersection LOS: F

Intersection Capacity Utilization 72.4%

ICU Level of Service C

Analysis Period (min) 15

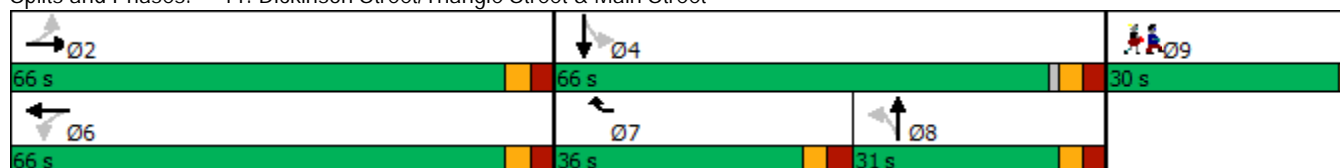
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 11: Dickinson Street/Triangle Street & Main Street



Lanes, Volumes, Timings
11: Dickinson Street/Triangle Street & Main Street





















Existing
PM Peak

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

28: South East Street & College Street

Existing
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	92	368	74	8	216	1	67	83	12	395	133	66
Future Volume (vph)	92	368	74	8	216	1	67	83	12	395	133	66
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	100		0	150		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97	0.99		0.97	1.00		0.99	1.00		1.00	0.99	
Frt		0.975			0.999			0.981			0.950	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1798	0	1805	1898	0	1752	1796	0	1736	1690	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1726	1798	0	1756	1898	0	1727	1796	0	1731	1690	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5						4			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		879			332			445			264	
Travel Time (s)		20.0			7.5			10.1			6.0	
Confl. Peds. (#/hr)	14		16	16		14	6		1	1		6
Peak Hour Factor	0.91	0.91	0.91	0.96	0.96	0.96	0.87	0.87	0.87	0.86	0.86	0.86
Heavy Vehicles (%)	1%	2%	3%	0%	0%	0%	3%	4%	0%	4%	7%	3%
Adj. Flow (vph)	101	404	81	8	225	1	77	95	14	459	155	77
Shared Lane Traffic (%)												
Lane Group Flow (vph)	101	485	0	8	226	0	77	109	0	459	232	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		10.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	12.0		15.0	12.0		11.0	12.0		11.0	12.0	
Total Split (s)	35.0	56.0		35.0	56.0		35.0	56.0		35.0	56.0	
Total Split (%)	17.5%	28.0%		17.5%	28.0%		17.5%	28.0%		17.5%	28.0%	
Maximum Green (s)	30.0	50.0		30.0	50.0		30.0	50.0		30.0	50.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	11.8	48.3		10.0	34.1		10.2	12.0		30.1	32.0	
Actuated g/C Ratio	0.09	0.38		0.08	0.27		0.08	0.09		0.23	0.25	
v/c Ratio	0.62	0.71		0.06	0.45		0.55	0.64		1.12	0.54	

Lanes, Volumes, Timings
28: South East Street & College Street













Existing
PM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	9%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	6.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings

28: South East Street & College Street

Existing
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	73.2	42.1		59.9	43.7		72.9	71.4		127.9	46.2	
Queue Delay	0.0	0.0		0.0	0.3		0.0	0.0		0.0	0.0	
Total Delay	73.2	42.1		59.9	44.0		72.9	71.4		127.9	46.2	
LOS	E	D		E	D		E	E		F	D	
Approach Delay		47.5			44.6			72.0			100.5	
Approach LOS		D			D			E			F	
Queue Length 50th (ft)	78	323		6	155		60	81		~408	150	
Queue Length 95th (ft)	157	565		26	258		122	157		#733	272	
Internal Link Dist (ft)		799			252			365			184	
Turn Bay Length (ft)	250			100			150			200		
Base Capacity (vph)	420	707		424	743		412	706		408	669	
Starvation Cap Reductn	0	0		0	179		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.24	0.69		0.02	0.40		0.19	0.15		1.13	0.35	

Intersection Summary

Area Type: Other

Cycle Length: 200

Actuated Cycle Length: 128.2

Natural Cycle: 120

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.13

Intersection Signal Delay: 71.3

Intersection LOS: E

Intersection Capacity Utilization 77.8%

ICU Level of Service D

Analysis Period (min) 15










~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 28: South East Street & College Street

 Ø1	 Ø2	 Ø3	 Ø4	 Ø9
35 s	56 s	35 s	56 s	18 s
 Ø5	 Ø6	 Ø7	 Ø8	
35 s	56 s	35 s	56 s	




Lanes, Volumes, Timings
28: South East Street & College Street

Existing
PM Peak

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

HCM 6th TWSC
1: East Pleasant Street & Strong Street




Existing
PM Peak

Intersection						
Int Delay, s/veh	6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	58	103	339	48	130	294
Future Vol, veh/h	58	103	339	48	130	294
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	78	78	77	77	94	94
Heavy Vehicles, %	0	1	3	0	1	3
Mvmt Flow	74	132	440	62	138	313
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1060	471	0	0	502	0
Stage 1	471	-	-	-	-	-
Stage 2	589	-	-	-	-	-
Critical Hdwy	6.4	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	250	595	-	-	1068	-
Stage 1	632	-	-	-	-	-
Stage 2	558	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	211	595	-	-	1068	-
Mov Cap-2 Maneuver	211	-	-	-	-	-
Stage 1	632	-	-	-	-	-
Stage 2	471	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	27.7	0		2.7		
HCM LOS	D					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	359	1068	-	
HCM Lane V/C Ratio	-	-	0.575	0.129	-	
HCM Control Delay (s)	-	-	27.7	8.9	0	
HCM Lane LOS	-	-	D	A	A	
HCM 95th %tile Q(veh)	-	-	3.4	0.4	-	

HCM 6th TWSC





2: North East Street & Strong Street

Existing
PM Peak

Intersection						
Int Delay, s/veh	4.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	13	120	75	149	134	11
Future Vol, veh/h	13	120	75	149	134	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	92	92	91	91
Heavy Vehicles, %	0	1	1	0	1	0
Mvmt Flow	16	145	82	162	147	12
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	479	153	159	0	-	0
Stage 1	153	-	-	-	-	-
Stage 2	326	-	-	-	-	-
Critical Hdwy	6.4	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	549	896	1427	-	-	-
Stage 1	880	-	-	-	-	-
Stage 2	736	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	514	896	1427	-	-	-
Mov Cap-2 Maneuver	514	-	-	-	-	-
Stage 1	825	-	-	-	-	-
Stage 2	736	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.3	2.6		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1427	-	835	-	-	
HCM Lane V/C Ratio	0.057	-	0.192	-	-	
HCM Control Delay (s)	7.7	0	10.3	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.7	-	-	




HCM 6th TWSC
8: South Whitney Street/North Whitney Street & Main Street

Existing
PM Peak

Intersection												
Int Delay, s/veh	6.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	8	605	56	22	450	7	34	10	49	6	4	16
Future Vol, veh/h	8	605	56	22	450	7	34	10	49	6	4	16
Conflicting Peds, #/hr	21	0	6	6	0	21	8	0	0	0	0	8
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	87	87	87	84	84	84	73	73	73	59	59	59
Heavy Vehicles, %	4	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	9	695	64	26	536	8	47	14	67	10	7	27
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	565	0	0	765	0	0	1368	1368	733	1399	1396	569
Stage 1	-	-	-	-	-	-	751	751	-	613	613	-
Stage 2	-	-	-	-	-	-	617	617	-	786	783	-
Critical Hdwy	4.14	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	997	-	-	857	-	-	125	148	424	119	142	525
Stage 1	-	-	-	-	-	-	406	421	-	483	486	-
Stage 2	-	-	-	-	-	-	481	484	-	388	407	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	977	-	-	852	-	-	107	136	422	87	130	511
Mov Cap-2 Maneuver	-	-	-	-	-	-	107	136	-	87	130	-
Stage 1	-	-	-	-	-	-	397	412	-	466	455	-
Stage 2	-	-	-	-	-	-	426	454	-	310	398	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.4			60.4			28.3		
HCM LOS							F			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	183	977	-	-	852	-	-	198				
HCM Lane V/C Ratio	0.696	0.009	-	-	0.031	-	-	0.223				
HCM Control Delay (s)	60.4	8.7	0	-	9.4	0	-	28.3				
HCM Lane LOS	F	A	A	-	A	A	-	D				
HCM 95th %tile Q(veh)	4.3	0	-	-	0.1	-	-	0.8				

Intersection

Int Delay, s/veh 0.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	2	1	28	0	0	0	0	440	13	22	573	0
Future Vol, veh/h	2	1	28	0	0	0	0	440	13	22	573	0
Conflicting Peds, #/hr	4	0	10	0	0	0	0	0	16	16	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	65	65	65	92	92	92	91	91	91	91	91	91
Heavy Vehicles, %	0	0	0	2	2	2	0	3	0	0	5	4
Mvmt Flow	3	2	43	0	0	0	0	484	14	24	630	0




Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1173	1192	640	-	0	0	514	0	0
Stage 1	678	678	-	-	-	-	-	-	-
Stage 2	495	514	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	214	189	479	0	-	-	1062	-	0
Stage 1	508	455	-	0	-	-	-	-	0
Stage 2	617	539	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	207	0	474	-	-	-	1062	-	-
Mov Cap-2 Maneuver	207	0	-	-	-	-	-	-	-
Stage 1	508	0	-	-	-	-	-	-	-
Stage 2	595	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.3	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	436	1062	-
HCM Lane V/C Ratio	-	-	0.109	0.023	-
HCM Control Delay (s)	-	-	14.3	8.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-




HCM 6th TWSC
17: South East Street & Fort River Exit

Existing
PM Peak

Intersection						
Int Delay, s/veh	0.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	16	14	469	0	0	586
Future Vol, veh/h	16	14	469	0	0	586
Conflicting Peds, #/hr	2	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	75	75	94	94	92	92
Heavy Vehicles, %	6	0	0	0	0	2
Mvmt Flow	21	19	499	0	0	637
Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1138	499	0	-	-	-
Stage 1	499	-	-	-	-	-
Stage 2	639	-	-	-	-	-
Critical Hdwy	6.46	6.2	-	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	-	-	-	-
Pot Cap-1 Maneuver	219	576	-	0	0	-
Stage 1	602	-	-	0	0	-
Stage 2	518	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	219	576	-	-	-	-
Mov Cap-2 Maneuver	219	-	-	-	-	-
Stage 1	602	-	-	-	-	-
Stage 2	517	-	-	-	-	-
Approach	WB		NB		SB	
HCM Control Delay, s	18.4		0		0	
HCM LOS	C					
Minor Lane/Major Mvmt		NBTWBLn1		SBT		
Capacity (veh/h)		- 308		-		
HCM Lane V/C Ratio		- 0.13		-		
HCM Control Delay (s)		- 18.4		-		
HCM Lane LOS		- C		-		
HCM 95th %tile Q(veh)		- 0.4		-		

HCM 6th TWSC
19: Hills Road & Strong Street

Existing
PM Peak

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	160	8	2	102	5	4
Future Vol, veh/h	160	8	2	102	5	4
Conflicting Peds, #/hr	0	6	6	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	77	77	75	75
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	190	10	3	132	7	5




Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	206	0	339
Stage 1	-	-	-	-	201
Stage 2	-	-	-	-	138
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1377	-	661
Stage 1	-	-	-	-	838
Stage 2	-	-	-	-	894
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1369	-	656
Mov Cap-2 Maneuver	-	-	-	-	656
Stage 1	-	-	-	-	833
Stage 2	-	-	-	-	892

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	10
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	727	-	-	1369	-
HCM Lane V/C Ratio	0.017	-	-	0.002	-
HCM Control Delay (s)	10	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 6th TWSC
21: Red Gate Lane & Strong Street

Existing
PM Peak

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	145	7	6	90	1	16
Future Vol, veh/h	145	7	6	90	1	16
Conflicting Peds, #/hr	0	15	15	0	0	6
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	83	83	73	73	80	80
Heavy Vehicles, %	0	0	0	2	0	0
Mvmt Flow	175	8	8	123	1	20




Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	198
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1387
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1367
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	816	-	-	1367	-
HCM Lane V/C Ratio	0.026	-	-	0.006	-
HCM Control Delay (s)	9.5	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-




HCM 6th TWSC
26: East Pleasant Street & Clark Hill Road

Existing
PM Peak

Intersection						
Int Delay, s/veh	2.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	15	75	40	362	377	1
Future Vol, veh/h	15	75	40	362	377	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	71	71	89	89	87	87
Heavy Vehicles, %	0	4	5	1	0	0
Mvmt Flow	21	106	45	407	433	1
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	931	434	434	0	-	0
Stage 1	434	-	-	-	-	-
Stage 2	497	-	-	-	-	-
Critical Hdwy	6.4	6.24	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.245	-	-	-
Pot Cap-1 Maneuver	299	618	1110	-	-	-
Stage 1	658	-	-	-	-	-
Stage 2	615	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	283	618	1110	-	-	-
Mov Cap-2 Maneuver	283	-	-	-	-	-
Stage 1	624	-	-	-	-	-
Stage 2	615	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	14.2	0.8		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1110	-	516	-	-	
HCM Lane V/C Ratio	0.04	-	0.246	-	-	
HCM Control Delay (s)	8.4	0	14.2	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	1	-	-	




HCM 6th TWSC
32: South East Street & Belchertwon Road

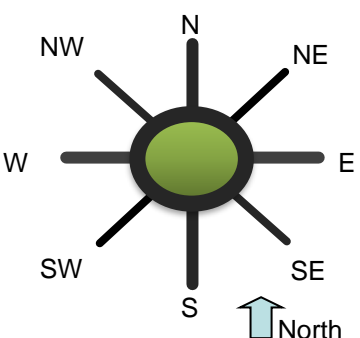
Existing
PM Peak

Intersection						
Int Delay, s/veh	3.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	3	274	176	0	0	594
Future Vol, veh/h	3	274	176	0	0	594
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	87	87	86	86
Heavy Vehicles, %	0	4	4	0	0	7
Mvmt Flow	3	311	202	0	0	691
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	893	202	0	-	-	-
Stage 1	202	-	-	-	-	-
Stage 2	691	-	-	-	-	-
Critical Hdwy	6.4	6.24	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	-	-	-	-
Pot Cap-1 Maneuver	315	834	-	0	0	-
Stage 1	837	-	-	0	0	-
Stage 2	501	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	315	834	-	-	-	-
Mov Cap-2 Maneuver	315	-	-	-	-	-
Stage 1	837	-	-	-	-	-
Stage 2	501	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.1	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 819		-			
HCM Lane V/C Ratio	- 0.384		-			
HCM Control Delay (s)	- 12.1		-			
HCM Lane LOS	- B		-			
HCM 95th %tile Q(veh)	- 1.8		-			

HCM 6th TWSC
33: Wildwood Driveway & Strong Street

Existing
PM Peak

Intersection						
Int Delay, s/veh	3.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	138	36	9	90	54	25
Future Vol, veh/h	138	36	9	90	54	25
Conflicting Peds, #/hr	0	13	13	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	73	73	54	54
Heavy Vehicles, %	0	0	0	3	0	0
Mvmt Flow	164	43	12	123	100	46
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	220	0	346	199
Stage 1	-	-	-	-	199	-
Stage 2	-	-	-	-	147	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1361	-	655	847
Stage 1	-	-	-	-	839	-
Stage 2	-	-	-	-	885	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1344	-	641	837
Mov Cap-2 Maneuver	-	-	-	-	641	-
Stage 1	-	-	-	-	829	-
Stage 2	-	-	-	-	876	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.7		11.6	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	692	-	-	1344	-	
HCM Lane V/C Ratio	0.211	-	-	0.009	-	
HCM Control Delay (s)	11.6	-	-	7.7	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.8	-	-	0	-	

General & Site Information v 4.2									
Analyst:		Eric Beaudry							
Agency/Co:		Pare Corporation							
Date:		4/26/2022							
Project or PI#:		21245.00 Amherst Elementary Schools							
Year, Peak Hour:		2022 Existing PM							
County/District:		Amherst, MA							
Intersection Name:		East Pleasant Street at Triangle Street							
									
Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			179		193		64	
	NE (2), vph								
	E (3), vph	103				49		257	
	SE (4), vph								
	S (5), vph	237		79				205	
	SW (6), vph								
	W (7), vph	32		342		167			
	NW (8), vph								
Output	Total Vehicles	372	0	600	0	409	0	526	0
Volume Characteristics		N	NE	E	SE	S	SW	W	NW
% Cars		99.0%	100.0%	100.0%	100.0%	95.0%	100.0%	96.0%	100.0%
% Heavy Vehicles		1.0%	0.0%	0.0%	0.0%	5.0%	0.0%	4.0%	0.0%
% Bicycle		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)		0	0	0	0	0	0	0	0
PHF		0.92	0.95	0.77	0.95	0.89	0.95	0.90	0.95
F _{HV}		0.990	1.000	1.000	1.000	0.952	1.000	0.962	1.000
F _{ped}		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Entry/Conflicting Flows		N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h		0	0	232	0	228	0	74	0
NE (2), pcu/h		0	0	0	0	0	0	0	0
E (3), pcu/h		113	0	0	0	58	0	297	0
SE (4), pcu/h		0	0	0	0	0	0	0	0
S (5), pcu/h		260	0	103	0	0	0	237	0
SW (6), pcu/h		0	0	0	0	0	0	0	0
W (7), pcu/h		35	0	444	0	197	0	0	0
NW (8), pcu/h		0	0	0	0	0	0	0	0
Entry flow, pcu/h		408	0	779	0	483	0	608	0
Conflicting flow, pcu/h		744	0	499	0	484	0	476	0

Results: Approach Measures of Effectiveness

HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	640	NA	830	NA	802	NA	817	NA
Entry Flow Rates, vph	404	0	779	0	460	0	584	0
V/C ratio	0.63		0.94		0.57		0.72	
Control Delay, sec/pcu	17.9		40.3		13.2		18.3	
LOS	C		E		B		C	
Average Queue (ft)	50		218		42		74	
95th % Queue (ft)	113		356		97		162	

Overall Intersection Measures of Effectiveness



















Int Control Delay (sec)	24.9	Int LOS	C	Max Approach V/C	0.94
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Notes: v 4.2

Lanes, Volumes, Timings

5: South East Street/North East Street & Main Street

No-Build
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	257	254	69	178	40	211	187	102	52	262	35
Future Volume (vph)	58	257	254	69	178	40	211	187	102	52	262	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	100		0	0		0
Storage Lanes	0		1	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	0.97		0.99		1.00	0.99			1.00	
Frt			0.850		0.981			0.947			0.986	
Flt Protected		0.991			0.988		0.950				0.993	
Satd. Flow (prot)	0	1715	1615	0	1707	0	1805	1767	0	0	1850	0
Flt Permitted		0.860			0.636		0.415				0.857	
Satd. Flow (perm)	0	1487	1564	0	1097	0	786	1767	0	0	1595	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			276		11			36			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2205			457			209			3887	
Travel Time (s)		50.1			10.4			4.8			88.3	
Confl. Peds. (#/hr)	4		8	8		4	5		7	7		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	12%	0%	8%	9%	0%	0%	0%	2%	0%	0%	3%
Adj. Flow (vph)	63	279	276	75	193	43	229	203	111	57	285	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	342	276	0	311	0	229	314	0	0	380	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0		11.0	11.0		11.0	11.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0		29.0	29.0		29.0	29.0	
Total Split (%)	39.7%	39.7%	39.7%	39.7%	39.7%		37.2%	37.2%		37.2%	37.2%	
Maximum Green (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		21.9	21.9		21.9		24.1	24.1			24.1	
Actuated g/C Ratio		0.30	0.30		0.30		0.33	0.33			0.33	
v/c Ratio		0.78	0.42		0.94		0.90	0.52			0.73	













Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

No-Build
PM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	23%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effect Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

No-Build
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		37.2	4.8		62.5		64.5	22.6			32.7	
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	
Total Delay		37.2	4.8		62.5		64.5	22.6			32.7	
LOS		D	A		E		E	C			C	
Approach Delay		22.7			62.5			40.3			32.7	
Approach LOS		C			E			D			C	
Queue Length 50th (ft)		142	0		133		105	108			158	
Queue Length 95th (ft)		236	49		#277		#244	190			#297	
Internal Link Dist (ft)		2125			377			129			3807	
Turn Bay Length (ft)			200				100					
Base Capacity (vph)		524	730		394		255	599			523	
Starvation Cap Reductn		0	0		0		0	0			0	
Spillback Cap Reductn		0	0		0		0	0			0	
Storage Cap Reductn		0	0		0		0	0			0	
Reduced v/c Ratio		0.65	0.38		0.79		0.90	0.52			0.73	

Intersection Summary

Area Type: Other

Cycle Length: 78

Actuated Cycle Length: 74.1

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 36.6

Intersection LOS: D

Intersection Capacity Utilization 84.2%






ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: South East Street/North East Street & Main Street

 Ø2	 Ø4	 Ø9
31 s	29 s	18 s
 Ø6	 Ø8	
31 s	29 s	

Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street


















No-Build
PM Peak

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

11: Dickinson Street/Triangle Street & Main Street

No-Build
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	258	4	6	228	255	8	27	26	412	24	18
Future Volume (vph)	25	258	4	6	228	255	8	27	26	412	24	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.95			0.98	
Frt		0.998				0.850		0.943			0.995	
Flt Protected		0.996			0.999			0.993			0.957	
Satd. Flow (prot)	0	1849	0	0	1862	1615	0	1701	0	0	1807	0
Flt Permitted		0.783			0.986			0.922			0.456	
Satd. Flow (perm)	0	1454	0	0	1838	1615	0	1576	0	0	844	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						277		19			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		642			1225			796			2686	
Travel Time (s)		14.6			27.8			18.1			61.0	
Confl. Peds. (#/hr)							11		26	26		11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	27	280	4	7	248	277	9	29	28	448	26	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	311	0	0	255	277	0	66	0	0	494	0
Turn Type	Perm	NA		Perm	NA	custom	Perm	NA		Perm	NA	
Protected Phases		2			6	7		8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6	7	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	16.0	16.0		16.0	16.0	14.0	14.0	14.0		14.0	14.0	
Total Split (s)	66.0	66.0		66.0	66.0	36.0	31.0	31.0		66.0	66.0	
Total Split (%)	40.5%	40.5%		40.5%	40.5%	22.1%	19.0%	19.0%		40.5%	40.5%	
Maximum Green (s)	60.0	60.0		60.0	60.0	30.0	25.0	25.0		60.0	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0			6.0	6.0		6.0			6.0	
Lead/Lag						Lead	Lag	Lag				
Lead-Lag Optimize?						Yes	Yes	Yes				
Vehicle Extension (s)	3.5	3.5		3.5	3.5	3.5	2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		28.3			28.3	21.1		36.0			60.1	
Actuated g/C Ratio		0.22			0.22	0.16		0.28			0.46	
v/c Ratio		0.99			0.64	0.56		0.15			1.27	

Lanes, Volumes, Timings
11: Dickinson Street/Triangle Street & Main Street













No-Build
PM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	18%
Maximum Green (s)	28.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	10.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings

11: Dickinson Street/Triangle Street & Main Street

No-Build
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		98.7			54.0	11.2		25.7			172.7	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		98.7			54.0	11.2		25.7			172.7	
LOS		F			D	B		C			F	
Approach Delay		98.7			31.7			25.7			172.7	
Approach LOS		F			C			C			F	
Queue Length 50th (ft)		264			197	0		26			~527	
Queue Length 95th (ft)		#405			287	88		73			#820	
Internal Link Dist (ft)		562			1145			716			2606	
Turn Bay Length (ft)						250						
Base Capacity (vph)		670			846	651		492			395	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.46			0.30	0.43		0.13			1.25	

Intersection Summary

Area Type: Other

Cycle Length: 163

Actuated Cycle Length: 130.5

Natural Cycle: 150

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.27

Intersection Signal Delay: 95.9

Intersection LOS: F

Intersection Capacity Utilization 74.4%

ICU Level of Service D

Analysis Period (min) 15

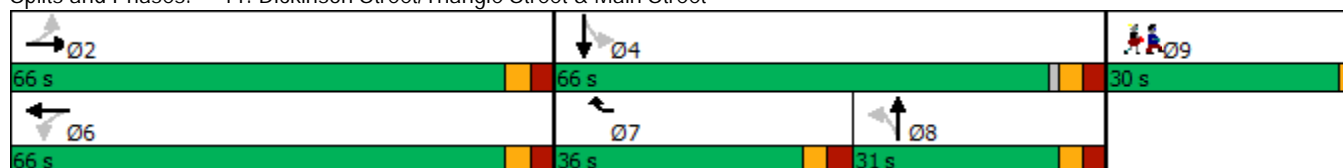
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.





















Splits and Phases: 11: Dickinson Street/Triangle Street & Main Street



Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings
28: South East Street & College Street

No-Build
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	382	77	9	224	2	70	86	13	410	138	69
Future Volume (vph)	96	382	77	9	224	2	70	86	13	410	138	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	100		0	150		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97	0.99		0.97	1.00		0.99	1.00		1.00	0.99	
Frt		0.975			0.999			0.980			0.950	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1798	0	1805	1897	0	1752	1794	0	1736	1690	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1728	1798	0	1757	1897	0	1727	1794	0	1731	1690	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5						4			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		879			332			445			264	
Travel Time (s)		20.0			7.5			10.1			6.0	
Confl. Peds. (#/hr)	14		16	16		14	6		1	1		6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	2%	3%	0%	0%	0%	3%	4%	0%	4%	7%	3%
Adj. Flow (vph)	104	415	84	10	243	2	76	93	14	446	150	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	499	0	10	245	0	76	107	0	446	225	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		10.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	12.0		15.0	12.0		11.0	12.0		11.0	12.0	
Total Split (s)	35.0	56.0		35.0	56.0		35.0	56.0		35.0	56.0	
Total Split (%)	17.5%	28.0%		17.5%	28.0%		17.5%	28.0%		17.5%	28.0%	
Maximum Green (s)	30.0	50.0		30.0	50.0		30.0	50.0		30.0	50.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	12.2	50.0		10.0	35.5		10.2	12.1		30.1	32.0	
Actuated g/C Ratio	0.09	0.38		0.08	0.27		0.08	0.09		0.23	0.25	
v/c Ratio	0.62	0.72		0.07	0.47		0.55	0.63		1.11	0.53	

Lanes, Volumes, Timings
28: South East Street & College Street













No-Build
PM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	9%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	6.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings

28: South East Street & College Street

No-Build
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	73.9	42.0		61.0	44.2		74.1	72.1		123.9	46.8	
Queue Delay	0.0	0.0		0.0	0.5		0.0	0.0		0.0	0.0	
Total Delay	73.9	42.0		61.0	44.7		74.1	72.1		123.9	46.8	
LOS	E	D		E	D		E	E		F	D	
Approach Delay		47.5			45.3			73.0			98.1	
Approach LOS		D			D			E			F	
Queue Length 50th (ft)	83	335		8	170		61	82		~403	149	
Queue Length 95th (ft)	159	585		30	280		125	160		#756	278	
Internal Link Dist (ft)		799			252			365			184	
Turn Bay Length (ft)	250			100			150			200		
Base Capacity (vph)	414	697		418	732		405	695		402	660	
Starvation Cap Reductn	0	0		0	199		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.25	0.72		0.02	0.46		0.19	0.15		1.11	0.34	

Intersection Summary

Area Type: Other

Cycle Length: 200

Actuated Cycle Length: 130

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.11

Intersection Signal Delay: 69.7

Intersection LOS: E

Intersection Capacity Utilization 79.8%

ICU Level of Service D

Analysis Period (min) 15










~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.




Splits and Phases: 28: South East Street & College Street

 Ø1	 Ø2	 Ø3	 Ø4	 Ø9
35 s	56 s	35 s	56 s	18 s
 Ø5	 Ø6	 Ø7	 Ø8	
35 s	56 s	35 s	56 s	

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	




HCM 6th TWSC
1: East Pleasant Street & Strong Street

No-Build
PM Peak

Intersection						
Int Delay, s/veh	5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	61	107	352	50	135	305
Future Vol, veh/h	61	107	352	50	135	305
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	1	3	0	1	3
Mvmt Flow	66	116	383	54	147	332
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1036	410	0	0	437	0
Stage 1	410	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Critical Hdwy	6.4	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	259	644	-	-	1128	-
Stage 1	674	-	-	-	-	-
Stage 2	537	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	218	644	-	-	1128	-
Mov Cap-2 Maneuver	218	-	-	-	-	-
Stage 1	674	-	-	-	-	-
Stage 2	451	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	23.2	0	2.7			
HCM LOS	C					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	377	1128	-	
HCM Lane V/C Ratio	-	-	0.484	0.13	-	
HCM Control Delay (s)	-	-	23.2	8.7	0	
HCM Lane LOS	-	-	C	A	A	
HCM 95th %tile Q(veh)	-	-	2.5	0.4	-	

HCM 6th TWSC 2: North East Street & Strong Street

No-Build
PM Peak

Intersection						
Int Delay, s/veh	3.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	125	78	155	139	12
Future Vol, veh/h	14	125	78	155	139	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	1	1	0	1	0
Mvmt Flow	15	136	85	168	151	13





Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	496	158	164	0	-	0
Stage 1	158	-	-	-	-	-
Stage 2	338	-	-	-	-	-
Critical Hdwy	6.4	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	537	890	1421	-	-	-
Stage 1	875	-	-	-	-	-
Stage 2	727	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	502	890	1421	-	-	-
Mov Cap-2 Maneuver	502	-	-	-	-	-
Stage 1	817	-	-	-	-	-
Stage 2	727	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	2.6	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1421	-	826	-	-
HCM Lane V/C Ratio	0.06	-	0.183	-	-
HCM Control Delay (s)	7.7	0	10.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.2	-	0.7	-	-

HCM 6th TWSC
8: South Whitney Street/North Whitney Street & Main Street

No-Build
PM Peak

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	9	627	58	23	466	8	36	11	51	7	5	17
Future Vol, veh/h	9	627	58	23	466	8	36	11	51	7	5	17
Conflicting Peds, #/hr	21	0	6	6	0	21	8	0	0	0	0	8
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	4	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	10	682	63	25	507	9	39	12	55	8	5	18
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	537	0	0	751	0	0	1321	1327	720	1350	1354	541
Stage 1	-	-	-	-	-	-	740	740	-	583	583	-
Stage 2	-	-	-	-	-	-	581	587	-	767	771	-
Critical Hdwy	4.14	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1021	-	-	868	-	-	135	157	431	129	151	545
Stage 1	-	-	-	-	-	-	412	426	-	502	502	-
Stage 2	-	-	-	-	-	-	503	500	-	398	413	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1001	-	-	863	-	-	119	144	429	99	139	530
Mov Cap-2 Maneuver	-	-	-	-	-	-	119	144	-	99	139	-
Stage 1	-	-	-	-	-	-	403	416	-	483	472	-
Stage 2	-	-	-	-	-	-	457	470	-	331	404	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.4			42.9			25.3		
HCM LOS							E			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	197	1001	-	-	863	-	-	209				
HCM Lane V/C Ratio	0.541	0.01	-	-	0.029	-	-	0.151				
HCM Control Delay (s)	42.9	8.6	0	-	9.3	0	-	25.3				
HCM Lane LOS	E	A	A	-	A	A	-	D				
HCM 95th %tile Q(veh)	2.8	0	-	-	0.1	-	-	0.5				

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↔						↔↕			↕↔	
Traffic Vol, veh/h	3	2	29	0	0	0	0	456	14	23	594	0
Future Vol, veh/h	3	2	29	0	0	0	0	456	14	23	594	0
Conflicting Peds, #/hr	4	0	10	0	0	0	0	0	16	16	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	2	2	2	0	3	0	0	5	4
Mvmt Flow	3	2	32	0	0	0	0	496	15	25	646	0
Major/Minor	Minor2			Major1				Major2				
Conflicting Flow All	1204	1223	656				-	0	0	527	0	0
Stage 1	696	696	-				-	-	-	-	-	-
Stage 2	508	527	-				-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.2				-	-	-	4.1	-	-
Critical Hdwy Stg 1	5.4	5.5	-				-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-				-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3				-	-	-	2.2	-	-
Pot Cap-1 Maneuver	205	181	469				0	-	-	1050	-	0
Stage 1	498	446	-				0	-	-	-	-	0
Stage 2	608	532	-				0	-	-	-	-	0
Platoon blocked, %								-	-		-	
Mov Cap-1 Maneuver	197	0	465				-	-	-	1050	-	-
Mov Cap-2 Maneuver	197	0	-				-	-	-	-	-	-
Stage 1	498	0	-				-	-	-	-	-	-
Stage 2	586	0	-				-	-	-	-	-	-
Approach	EB			NB				SB				
HCM Control Delay, s	14.6			0				0.3				
HCM LOS	B											
Minor Lane/Major Mvmt		NBT	NBR	EBLn1	SBL	SBT						
Capacity (veh/h)		-	-	412	1050	-						
HCM Lane V/C Ratio		-	-	0.09	0.024	-						
HCM Control Delay (s)		-	-	14.6	8.5	0						
HCM Lane LOS		-	-	B	A	A						
HCM 95th %tile Q(veh)		-	-	0.3	0.1	-						

HCM 6th TWSC
17: South East Street & Fort River Exit

No-Build
PM Peak

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	17	15	486	0	0	607
Future Vol, veh/h	17	15	486	0	0	607
Conflicting Peds, #/hr	2	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	0	0	0	0	2
Mvmt Flow	18	16	528	0	0	660




Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1190	528	0	-	-	-
Stage 1	528	-	-	-	-	-
Stage 2	662	-	-	-	-	-
Critical Hdwy	6.46	6.2	-	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	-	-	-	-
Pot Cap-1 Maneuver	204	554	-	0	0	-
Stage 1	584	-	-	0	0	-
Stage 2	506	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	204	554	-	-	-	-
Mov Cap-2 Maneuver	204	-	-	-	-	-
Stage 1	584	-	-	-	-	-
Stage 2	505	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	19.1	0	0
HCM LOS	C		

Minor Lane/Major Mvmt	NBTWBLn1	SBT
Capacity (veh/h)	- 290	-
HCM Lane V/C Ratio	- 0.12	-
HCM Control Delay (s)	- 19.1	-
HCM Lane LOS	- C	-
HCM 95th %tile Q(veh)	- 0.4	-




HCM 6th TWSC
19: Hills Road & Strong Street

No-Build
PM Peak

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	166	9	3	106	6	5
Future Vol, veh/h	166	9	3	106	6	5
Conflicting Peds, #/hr	0	6	6	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	180	10	3	115	7	5
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	196	0	312	191
Stage 1	-	-	-	-	191	-
Stage 2	-	-	-	-	121	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1389	-	685	856
Stage 1	-	-	-	-	846	-
Stage 2	-	-	-	-	909	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1381	-	680	851
Mov Cap-2 Maneuver	-	-	-	-	680	-
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	907	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		9.9	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	748	-	-	1381	-	
HCM Lane V/C Ratio	0.016	-	-	0.002	-	
HCM Control Delay (s)	9.9	-	-	7.6	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th TWSC
21: Red Gate Lane & Strong Street

No-Build
PM Peak

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	151	8	7	94	2	17
Future Vol, veh/h	151	8	7	94	2	17
Conflicting Peds, #/hr	0	15	15	0	0	6
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	2	0	0
Mvmt Flow	164	9	8	102	2	18




Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	188
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	-	-	4.1
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	-	-	2.2
Pot Cap-1 Maneuver	-	-	1398
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1378
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	820	-	-	1378	-
HCM Lane V/C Ratio	0.025	-	-	0.006	-
HCM Control Delay (s)	9.5	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-




HCM 6th TWSC
26: East Pleasant Street & Clark Hill Road

No-Build
PM Peak

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	78	42	375	391	2
Future Vol, veh/h	16	78	42	375	391	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	5	1	0	0
Mvmt Flow	17	85	46	408	425	2
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	926	426	427	0	-	0
Stage 1	426	-	-	-	-	-
Stage 2	500	-	-	-	-	-
Critical Hdwy	6.4	6.24	4.15	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	2.245	-	-	-
Pot Cap-1 Maneuver	301	624	1116	-	-	-
Stage 1	663	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	285	624	1116	-	-	-
Mov Cap-2 Maneuver	285	-	-	-	-	-
Stage 1	628	-	-	-	-	-
Stage 2	613	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	13.6	0.8		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1116	-	519	-	-	
HCM Lane V/C Ratio	0.041	-	0.197	-	-	
HCM Control Delay (s)	8.4	0	13.6	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-	




HCM 6th TWSC
32: South East Street & Belchertwon Road

No-Build
PM Peak

Intersection						
Int Delay, s/veh	3.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	284	183	0	0	616
Future Vol, veh/h	4	284	183	0	0	616
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	4	0	0	7
Mvmt Flow	4	309	199	0	0	670
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	869	199	0	-	-	-
Stage 1	199	-	-	-	-	-
Stage 2	670	-	-	-	-	-
Critical Hdwy	6.4	6.24	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	-	-	-	-
Pot Cap-1 Maneuver	325	837	-	0	0	-
Stage 1	839	-	-	0	0	-
Stage 2	512	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	325	837	-	-	-	-
Mov Cap-2 Maneuver	325	-	-	-	-	-
Stage 1	839	-	-	-	-	-
Stage 2	512	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.1	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 819		-			
HCM Lane V/C Ratio	- 0.382		-			
HCM Control Delay (s)	- 12.1		-			
HCM Lane LOS	- B		-			
HCM 95th %tile Q(veh)	- 1.8		-			

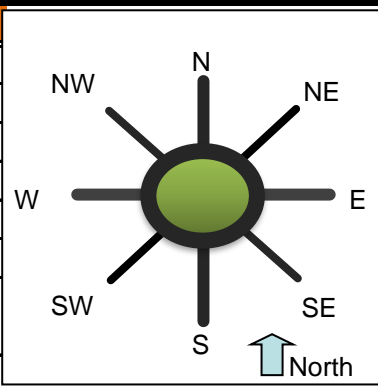
HCM 6th TWSC
33: Wildwood Driveway & Strong Street

No-Build
PM Peak

Intersection						
Int Delay, s/veh	2.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	143	38	10	94	56	26
Future Vol, veh/h	143	38	10	94	56	26
Conflicting Peds, #/hr	0	13	13	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	3	0	0
Mvmt Flow	155	41	11	102	61	28
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	209	0	313	189
Stage 1	-	-	-	-	189	-
Stage 2	-	-	-	-	124	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1374	-	684	858
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	907	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1357	-	670	847
Mov Cap-2 Maneuver	-	-	-	-	670	-
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	899	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.7		10.7	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	718	-	-	1357	-	
HCM Lane V/C Ratio	0.124	-	-	0.008	-	
HCM Control Delay (s)	10.7	-	-	7.7	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.4	-	-	0	-	

General & Site Information v 4.2

Analyst: Eric Beaudry
Agency/Co: Pare Corporation
Date: 4/26/2022
Project or PI#: 21245.00 Amherst Elementary Schools
Year, Peak Hour: 2029 No-Build PM
County/District: Amherst, MA
Intersection Name: East Pleasant Street at Triangle Street



Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			186		200		67	
	NE (2), vph								
	E (3), vph	107				51		267	
	SE (4), vph								
	S (5), vph	246		82				213	
	SW (6), vph								
	W (7), vph	34		355		173			
	NW (8), vph								
Output	Total Vehicles	387	0	623	0	424	0	547	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	99.0%	100.0%	100.0%	100.0%	95.0%	100.0%	96.0%	100.0%
% Heavy Vehicles	1.0%	0.0%	0.0%	0.0%	5.0%	0.0%	4.0%	0.0%
% Bicycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.92	0.95	0.92	0.95	0.92	0.95	0.92	0.95
F _{HV}	0.990	1.000	1.000	1.000	0.952	1.000	0.962	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	202	0	228	0	76	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	117	0	0	0	58	0	302	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	270	0	89	0	0	0	241	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	37	0	386	0	197	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	425	0	677	0	484	0	618	0
Conflicting flow, pcu/h	672	0	501	0	495	0	477	0

Results: Approach Measures of Effectiveness

HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	688	NA	827	NA	793	NA	816	NA
Entry Flow Rates, vph	421	0	677	0	461	0	595	0
V/C ratio	0.61		0.82		0.58		0.73	
Control Delay, sec/pcu	16.2		24.8		13.5		18.9	
LOS	C		C		B		C	
Average Queue (ft)	47		117		43		78	
95th % Queue (ft)	106		228		100		170	

Overall Intersection Measures of Effectiveness



















Int Control Delay (sec)	19.1	Int LOS	C	Max Approach V/C	0.82
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Notes: v 4.2

Lanes, Volumes, Timings

5: South East Street/North East Street & Main Street

Build
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	58	257	254	69	178	40	211	187	102	52	262	35
Future Volume (vph)	58	257	254	69	178	40	211	187	102	52	262	35
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		200	0		0	100		0	0		0
Storage Lanes	0		1	0		0	1		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor		1.00	0.97		0.99		1.00	0.99			1.00	
Frt			0.850		0.981			0.947			0.986	
Flt Protected		0.991			0.988		0.950				0.993	
Satd. Flow (prot)	0	1715	1615	0	1707	0	1805	1767	0	0	1850	0
Flt Permitted		0.860			0.636		0.415				0.857	
Satd. Flow (perm)	0	1487	1564	0	1097	0	786	1767	0	0	1595	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			276		11			36			7	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		2205			457			209			3887	
Travel Time (s)		50.1			10.4			4.8			88.3	
Confl. Peds. (#/hr)	4		8	8		4	5		7	7		5
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	0%	12%	0%	8%	9%	0%	0%	0%	2%	0%	0%	3%
Adj. Flow (vph)	63	279	276	75	193	43	229	203	111	57	285	38
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	342	276	0	311	0	229	314	0	0	380	0
Turn Type	Perm	NA	Perm	Perm	NA		Perm	NA		Perm	NA	
Protected Phases		2			6			4			8	
Permitted Phases	2		2	6			4			8		
Detector Phase	2	2	2	6	6		4	4		8	8	
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0		11.0	11.0		11.0	11.0	
Total Split (s)	31.0	31.0	31.0	31.0	31.0		29.0	29.0		29.0	29.0	
Total Split (%)	39.7%	39.7%	39.7%	39.7%	39.7%		37.2%	37.2%		37.2%	37.2%	
Maximum Green (s)	26.0	26.0	26.0	26.0	26.0		24.0	24.0		24.0	24.0	
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0	
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0	
Total Lost Time (s)		5.0	5.0		5.0		5.0	5.0			5.0	
Lead/Lag												
Lead-Lag Optimize?												
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0	
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)		21.9	21.9		21.9		24.1	24.1			24.1	
Actuated g/C Ratio		0.30	0.30		0.30		0.33	0.33			0.33	
v/c Ratio		0.78	0.42		0.94		0.90	0.52			0.73	













Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

Build
PM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	23%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	5.0
Flash Dont Walk (s)	11.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

Build
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		37.2	4.8		62.5		64.5	22.6			32.7	
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0	
Total Delay		37.2	4.8		62.5		64.5	22.6			32.7	
LOS		D	A		E		E	C			C	
Approach Delay		22.7			62.5			40.3			32.7	
Approach LOS		C			E			D			C	
Queue Length 50th (ft)		142	0		133		105	108			158	
Queue Length 95th (ft)		236	49		#277		#244	190			#297	
Internal Link Dist (ft)		2125			377			129			3807	
Turn Bay Length (ft)			200				100					
Base Capacity (vph)		524	730		394		255	599			523	
Starvation Cap Reductn		0	0		0		0	0			0	
Spillback Cap Reductn		0	0		0		0	0			0	
Storage Cap Reductn		0	0		0		0	0			0	
Reduced v/c Ratio		0.65	0.38		0.79		0.90	0.52			0.73	

Intersection Summary

Area Type: Other

Cycle Length: 78

Actuated Cycle Length: 74.1

Natural Cycle: 80

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 36.6

Intersection LOS: D

Intersection Capacity Utilization 84.2%






ICU Level of Service E

Analysis Period (min) 15

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 5: South East Street/North East Street & Main Street

 Ø2	 Ø4	 Ø9
31 s	29 s	18 s
 Ø6	 Ø8	
31 s	29 s	

Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street


















Build
PM Peak

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

11: Dickinson Street/Triangle Street & Main Street

Build
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	25	258	4	6	228	255	8	27	26	412	24	18
Future Volume (vph)	25	258	4	6	228	255	8	27	26	412	24	18
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	0		0	0		250	0		0	0		0
Storage Lanes	0		0	0		1	0		0	0		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor								0.95			0.98	
Frt		0.998				0.850		0.943			0.995	
Flt Protected		0.996			0.999			0.993			0.957	
Satd. Flow (prot)	0	1849	0	0	1862	1615	0	1701	0	0	1807	0
Flt Permitted		0.783			0.986			0.922			0.456	
Satd. Flow (perm)	0	1454	0	0	1838	1615	0	1576	0	0	844	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)						277		19			1	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		642			1225			796			2686	
Travel Time (s)		14.6			27.8			18.1			61.0	
Confl. Peds. (#/hr)							11		26	26		11
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	4%	2%	0%	0%	2%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	27	280	4	7	248	277	9	29	28	448	26	20
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	311	0	0	255	277	0	66	0	0	494	0
Turn Type	Perm	NA		Perm	NA	custom	Perm	NA		Perm	NA	
Protected Phases		2			6	7		8			4	
Permitted Phases	2			6			8			4		
Detector Phase	2	2		6	6	7	8	8		4	4	
Switch Phase												
Minimum Initial (s)	10.0	10.0		10.0	10.0	8.0	8.0	8.0		8.0	8.0	
Minimum Split (s)	24.0	24.0		16.0	16.0	14.0	14.0	14.0		14.0	14.0	
Total Split (s)	66.0	66.0		66.0	66.0	36.0	31.0	31.0		66.0	66.0	
Total Split (%)	40.5%	40.5%		40.5%	40.5%	22.1%	19.0%	19.0%		40.5%	40.5%	
Maximum Green (s)	60.0	60.0		60.0	60.0	30.0	25.0	25.0		60.0	60.0	
Yellow Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
All-Red Time (s)	3.0	3.0		3.0	3.0	3.0	3.0	3.0		3.0	3.0	
Lost Time Adjust (s)		0.0			0.0	0.0		0.0			0.0	
Total Lost Time (s)		6.0			6.0	6.0		6.0			6.0	
Lead/Lag						Lead	Lag	Lag				
Lead-Lag Optimize?						Yes	Yes	Yes				
Vehicle Extension (s)	3.5	3.5		3.5	3.5	3.5	2.0	2.0		2.0	2.0	
Recall Mode	Min	Min		Min	Min	Min	None	None		None	None	
Walk Time (s)	7.0	7.0										
Flash Dont Walk (s)	11.0	11.0										
Pedestrian Calls (#/hr)	0	0										
Act Effect Green (s)		28.3			28.3	21.1		36.0			60.1	
Actuated g/C Ratio		0.22			0.22	0.16		0.28			0.46	
v/c Ratio		0.99			0.64	0.56		0.15			1.27	

Lanes, Volumes, Timings
11: Dickinson Street/Triangle Street & Main Street













Build
PM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	5.0
Minimum Split (s)	30.0
Total Split (s)	30.0
Total Split (%)	18%
Maximum Green (s)	28.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	10.0
Flash Dont Walk (s)	18.0
Pedestrian Calls (#/hr)	0
Act Effct Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings

11: Dickinson Street/Triangle Street & Main Street

Build
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay		98.7			54.0	11.2		25.7			172.7	
Queue Delay		0.0			0.0	0.0		0.0			0.0	
Total Delay		98.7			54.0	11.2		25.7			172.7	
LOS		F			D	B		C			F	
Approach Delay		98.7			31.7			25.7			172.7	
Approach LOS		F			C			C			F	
Queue Length 50th (ft)		264			197	0		26			~527	
Queue Length 95th (ft)		#405			287	88		73			#820	
Internal Link Dist (ft)		562			1145			716			2606	
Turn Bay Length (ft)						250						
Base Capacity (vph)		670			846	651		492			395	
Starvation Cap Reductn		0			0	0		0			0	
Spillback Cap Reductn		0			0	0		0			0	
Storage Cap Reductn		0			0	0		0			0	
Reduced v/c Ratio		0.46			0.30	0.43		0.13			1.25	

Intersection Summary

Area Type: Other

Cycle Length: 163

Actuated Cycle Length: 130.5

Natural Cycle: 145

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.27

Intersection Signal Delay: 95.9

Intersection LOS: F

Intersection Capacity Utilization 74.4%

ICU Level of Service D

Analysis Period (min) 15

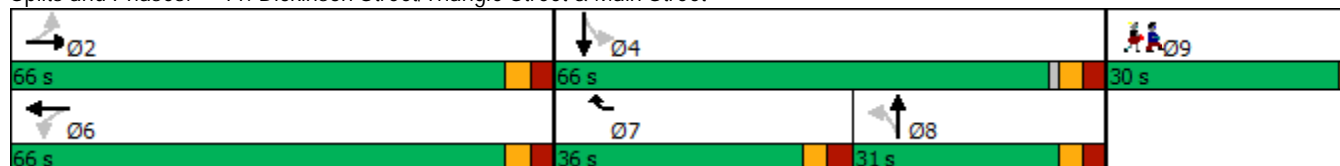
~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 11: Dickinson Street/Triangle Street & Main Street

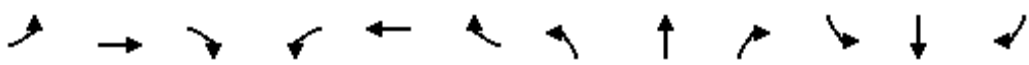










Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

Lanes, Volumes, Timings

28: South East Street & College Street

Build
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	96	382	77	9	224	2	70	86	13	410	138	69
Future Volume (vph)	96	382	77	9	224	2	70	86	13	410	138	69
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	250		0	100		0	150		0	200		0
Storage Lanes	1		0	1		0	1		0	1		0
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.97	0.99		0.97	1.00		0.99	1.00		1.00	0.99	
Frt		0.975			0.999			0.980			0.950	
Flt Protected	0.950			0.950			0.950			0.950		
Satd. Flow (prot)	1787	1798	0	1805	1897	0	1752	1794	0	1736	1690	0
Flt Permitted	0.950			0.950			0.950			0.950		
Satd. Flow (perm)	1728	1798	0	1757	1897	0	1727	1794	0	1731	1690	0
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		5						4			12	
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		879			332			445			264	
Travel Time (s)		20.0			7.5			10.1			6.0	
Confl. Peds. (#/hr)	14		16	16		14	6		1	1		6
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicles (%)	1%	2%	3%	0%	0%	0%	3%	4%	0%	4%	7%	3%
Adj. Flow (vph)	104	415	84	10	243	2	76	93	14	446	150	75
Shared Lane Traffic (%)												
Lane Group Flow (vph)	104	499	0	10	245	0	76	107	0	446	225	0
Turn Type	Prot	NA		Prot	NA		Prot	NA		Prot	NA	
Protected Phases	5	2		1	6		3	8		7	4	
Permitted Phases												
Detector Phase	5	2		1	6		3	8		7	4	
Switch Phase												
Minimum Initial (s)	6.0	6.0		10.0	6.0		6.0	6.0		6.0	6.0	
Minimum Split (s)	11.0	12.0		15.0	12.0		11.0	12.0		11.0	12.0	
Total Split (s)	35.0	56.0		35.0	56.0		35.0	56.0		35.0	56.0	
Total Split (%)	17.5%	28.0%		17.5%	28.0%		17.5%	28.0%		17.5%	28.0%	
Maximum Green (s)	30.0	50.0		30.0	50.0		30.0	50.0		30.0	50.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	1.0	2.0		1.0	2.0		1.0	2.0		1.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	
Total Lost Time (s)	5.0	6.0		5.0	6.0		5.0	6.0		5.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag		Lead	Lag		Lead	Lag	
Lead-Lag Optimize?	Yes	Yes		Yes	Yes		Yes	Yes		Yes	Yes	
Vehicle Extension (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Recall Mode	None	Min		None	Min		None	None		None	None	
Walk Time (s)												
Flash Dont Walk (s)												
Pedestrian Calls (#/hr)												
Act Effect Green (s)	12.2	50.0		10.0	35.5		10.2	12.1		30.1	32.0	
Actuated g/C Ratio	0.09	0.38		0.08	0.27		0.08	0.09		0.23	0.25	
v/c Ratio	0.62	0.72		0.07	0.47		0.55	0.63		1.11	0.53	

Lanes, Volumes, Timings
28: South East Street & College Street













Build
PM Peak

Lane Group	Ø9
Lane Configurations	
Traffic Volume (vph)	
Future Volume (vph)	
Ideal Flow (vphpl)	
Storage Length (ft)	
Storage Lanes	
Taper Length (ft)	
Lane Util. Factor	
Ped Bike Factor	
Frt	
Flt Protected	
Satd. Flow (prot)	
Flt Permitted	
Satd. Flow (perm)	
Right Turn on Red	
Satd. Flow (RTOR)	
Link Speed (mph)	
Link Distance (ft)	
Travel Time (s)	
Confl. Peds. (#/hr)	
Peak Hour Factor	
Heavy Vehicles (%)	
Adj. Flow (vph)	
Shared Lane Traffic (%)	
Lane Group Flow (vph)	
Turn Type	
Protected Phases	9
Permitted Phases	
Detector Phase	
Switch Phase	
Minimum Initial (s)	6.0
Minimum Split (s)	18.0
Total Split (s)	18.0
Total Split (%)	9%
Maximum Green (s)	16.0
Yellow Time (s)	2.0
All-Red Time (s)	0.0
Lost Time Adjust (s)	
Total Lost Time (s)	
Lead/Lag	
Lead-Lag Optimize?	
Vehicle Extension (s)	3.0
Recall Mode	Ped
Walk Time (s)	6.0
Flash Dont Walk (s)	10.0
Pedestrian Calls (#/hr)	0
Act Effect Green (s)	
Actuated g/C Ratio	
v/c Ratio	

Lanes, Volumes, Timings

28: South East Street & College Street

Build
PM Peak

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Control Delay	73.9	42.0		61.0	44.2		74.1	72.1		123.9	46.8	
Queue Delay	0.0	0.0		0.0	0.5		0.0	0.0		0.0	0.0	
Total Delay	73.9	42.0		61.0	44.7		74.1	72.1		123.9	46.8	
LOS	E	D		E	D		E	E		F	D	
Approach Delay		47.5			45.3			73.0			98.1	
Approach LOS		D			D			E			F	
Queue Length 50th (ft)	83	335		8	170		61	82		~403	149	
Queue Length 95th (ft)	159	585		30	280		125	160		#756	278	
Internal Link Dist (ft)		799			252			365			184	
Turn Bay Length (ft)	250			100			150			200		
Base Capacity (vph)	414	697		418	732		405	695		402	660	
Starvation Cap Reductn	0	0		0	199		0	0		0	0	
Spillback Cap Reductn	0	0		0	0		0	0		0	0	
Storage Cap Reductn	0	0		0	0		0	0		0	0	
Reduced v/c Ratio	0.25	0.72		0.02	0.46		0.19	0.15		1.11	0.34	

Intersection Summary

Area Type: Other

Cycle Length: 200

Actuated Cycle Length: 130

Natural Cycle: 110

Control Type: Actuated-Uncoordinated

Maximum v/c Ratio: 1.11

Intersection Signal Delay: 69.7

Intersection LOS: E

Intersection Capacity Utilization 79.8%

ICU Level of Service D

Analysis Period (min) 15










~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 28: South East Street & College Street




 Ø1	 Ø2	 Ø3	 Ø4	 Ø9
35 s	56 s	35 s	56 s	18 s
 Ø5	 Ø6	 Ø7	 Ø8	
35 s	56 s	35 s	56 s	

Lane Group	Ø9
Control Delay	
Queue Delay	
Total Delay	
LOS	
Approach Delay	
Approach LOS	
Queue Length 50th (ft)	
Queue Length 95th (ft)	
Internal Link Dist (ft)	
Turn Bay Length (ft)	
Base Capacity (vph)	
Starvation Cap Reductn	
Spillback Cap Reductn	
Storage Cap Reductn	
Reduced v/c Ratio	
Intersection Summary	

HCM 6th TWSC

1: East Pleasant Street & Strong Street




Build
PM Peak

Intersection						
Int Delay, s/veh	5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	61	107	352	50	135	305
Future Vol, veh/h	61	107	352	50	135	305
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	1	3	0	1	3
Mvmt Flow	66	116	383	54	147	332
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	1036	410	0	0	437	0
Stage 1	410	-	-	-	-	-
Stage 2	626	-	-	-	-	-
Critical Hdwy	6.4	6.21	-	-	4.11	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	-	-	2.209	-
Pot Cap-1 Maneuver	259	644	-	-	1128	-
Stage 1	674	-	-	-	-	-
Stage 2	537	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	218	644	-	-	1128	-
Mov Cap-2 Maneuver	218	-	-	-	-	-
Stage 1	674	-	-	-	-	-
Stage 2	451	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	23.2	0		2.7		
HCM LOS	C					
Minor Lane/Major Mvmt		NBT	NBRWBLn1	SBL	SBT	
Capacity (veh/h)		-	-	377	1128	-
HCM Lane V/C Ratio		-	-	0.484	0.13	-
HCM Control Delay (s)		-	-	23.2	8.7	0
HCM Lane LOS		-	-	C	A	A
HCM 95th %tile Q(veh)		-	-	2.5	0.4	-

HCM 6th TWSC

2: North East Street & Strong Street

Build
PM Peak

Intersection						
Int Delay, s/veh	3.9					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	14	125	78	155	139	12
Future Vol, veh/h	14	125	78	155	139	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	1	1	0	1	0
Mvmt Flow	15	136	85	168	151	13
Major/Minor	Minor2	Major1		Major2		
Conflicting Flow All	496	158	164	0	-	0
Stage 1	158	-	-	-	-	-
Stage 2	338	-	-	-	-	-
Critical Hdwy	6.4	6.21	4.11	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.309	2.209	-	-	-
Pot Cap-1 Maneuver	537	890	1421	-	-	-
Stage 1	875	-	-	-	-	-
Stage 2	727	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	502	890	1421	-	-	-
Mov Cap-2 Maneuver	502	-	-	-	-	-
Stage 1	817	-	-	-	-	-
Stage 2	727	-	-	-	-	-
Approach	EB	NB		SB		
HCM Control Delay, s	10.3	2.6		0		
HCM LOS	B					
Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR	
Capacity (veh/h)	1421	-	826	-	-	
HCM Lane V/C Ratio	0.06	-	0.183	-	-	
HCM Control Delay (s)	7.7	0	10.3	-	-	
HCM Lane LOS	A	A	B	-	-	
HCM 95th %tile Q(veh)	0.2	-	0.7	-	-	

HCM 6th TWSC
8: South Whitney Street/North Whitney Street & Main Street

Build
PM Peak

Intersection												
Int Delay, s/veh	4											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	627	58	23	466	8	36	11	51	7	5	17
Future Vol, veh/h	9	627	58	23	466	8	36	11	51	7	5	17
Conflicting Peds, #/hr	21	0	6	6	0	21	8	0	0	0	0	8
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	4	2	0	0	2	0	0	0	0	0	0	0
Mvmt Flow	10	682	63	25	507	9	39	12	55	8	5	18
Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	537	0	0	751	0	0	1321	1327	720	1350	1354	541
Stage 1	-	-	-	-	-	-	740	740	-	583	583	-
Stage 2	-	-	-	-	-	-	581	587	-	767	771	-
Critical Hdwy	4.14	-	-	4.1	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.236	-	-	2.2	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	1021	-	-	868	-	-	135	157	431	129	151	545
Stage 1	-	-	-	-	-	-	412	426	-	502	502	-
Stage 2	-	-	-	-	-	-	503	500	-	398	413	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1001	-	-	863	-	-	119	144	429	99	139	530
Mov Cap-2 Maneuver	-	-	-	-	-	-	119	144	-	99	139	-
Stage 1	-	-	-	-	-	-	403	416	-	483	472	-
Stage 2	-	-	-	-	-	-	457	470	-	331	404	-
Approach	EB			WB			NB			SB		
HCM Control Delay, s	0.1			0.4			42.9			25.3		
HCM LOS							E			D		
Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1				
Capacity (veh/h)	197	1001	-	-	863	-	-	209				
HCM Lane V/C Ratio	0.541	0.01	-	-	0.029	-	-	0.151				
HCM Control Delay (s)	42.9	8.6	0	-	9.3	0	-	25.3				
HCM Lane LOS	E	A	A	-	A	A	-	D				
HCM 95th %tile Q(veh)	2.8	0	-	-	0.1	-	-	0.5				

Intersection												
Int Delay, s/veh	0.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕						↕			↕	
Traffic Vol, veh/h	3	2	29	0	0	0	0	456	14	23	594	0
Future Vol, veh/h	3	2	29	0	0	0	0	456	14	23	594	0
Conflicting Peds, #/hr	4	0	10	0	0	0	0	0	16	16	0	0
Sign Control	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	2	2	2	0	3	0	0	5	4
Mvmt Flow	3	2	32	0	0	0	0	496	15	25	646	0

Major/Minor	Minor2			Major1			Major2		
Conflicting Flow All	1204	1223	656	-	0	0	527	0	0
Stage 1	696	696	-	-	-	-	-	-	-
Stage 2	508	527	-	-	-	-	-	-	-
Critical Hdwy	6.4	6.5	6.2	-	-	-	4.1	-	-
Critical Hdwy Stg 1	5.4	5.5	-	-	-	-	-	-	-
Critical Hdwy Stg 2	5.4	5.5	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4	3.3	-	-	-	2.2	-	-
Pot Cap-1 Maneuver	205	181	469	0	-	-	1050	-	0
Stage 1	498	446	-	0	-	-	-	-	0
Stage 2	608	532	-	0	-	-	-	-	0
Platoon blocked, %					-	-		-	
Mov Cap-1 Maneuver	197	0	465	-	-	-	1050	-	-
Mov Cap-2 Maneuver	197	0	-	-	-	-	-	-	-
Stage 1	498	0	-	-	-	-	-	-	-
Stage 2	586	0	-	-	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	14.6	0	0.3
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	EBLn1	SBL	SBT
Capacity (veh/h)	-	-	412	1050	-
HCM Lane V/C Ratio	-	-	0.09	0.024	-
HCM Control Delay (s)	-	-	14.6	8.5	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-




HCM 6th TWSC
17: South East Street & Fort River Exit

Build
PM Peak

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	W		T			T
Traffic Vol, veh/h	17	15	486	0	0	607
Future Vol, veh/h	17	15	486	0	0	607
Conflicting Peds, #/hr	2	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	6	0	0	0	0	2
Mvmt Flow	18	16	528	0	0	660
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	1190	528	0	-	-	-
Stage 1	528	-	-	-	-	-
Stage 2	662	-	-	-	-	-
Critical Hdwy	6.46	6.2	-	-	-	-
Critical Hdwy Stg 1	5.46	-	-	-	-	-
Critical Hdwy Stg 2	5.46	-	-	-	-	-
Follow-up Hdwy	3.554	3.3	-	-	-	-
Pot Cap-1 Maneuver	204	554	-	0	0	-
Stage 1	584	-	-	0	0	-
Stage 2	506	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	204	554	-	-	-	-
Mov Cap-2 Maneuver	204	-	-	-	-	-
Stage 1	584	-	-	-	-	-
Stage 2	505	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	19.1	0	0			
HCM LOS	C					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 290		-			
HCM Lane V/C Ratio	- 0.12		-			
HCM Control Delay (s)	- 19.1		-			
HCM Lane LOS	- C		-			
HCM 95th %tile Q(veh)	- 0.4		-			




HCM 6th TWSC
19: Hills Road & Strong Street

Build
PM Peak

Intersection						
Int Delay, s/veh	0.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	166	9	3	106	6	5
Future Vol, veh/h	166	9	3	106	6	5
Conflicting Peds, #/hr	0	6	6	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	1	0	0	1	0	0
Mvmt Flow	180	10	3	115	7	5
Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	196	0	312	191
Stage 1	-	-	-	-	191	-
Stage 2	-	-	-	-	121	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1389	-	685	856
Stage 1	-	-	-	-	846	-
Stage 2	-	-	-	-	909	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1381	-	680	851
Mov Cap-2 Maneuver	-	-	-	-	680	-
Stage 1	-	-	-	-	841	-
Stage 2	-	-	-	-	907	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.2		9.9	
HCM LOS	A					
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	748	-	-	1381	-	
HCM Lane V/C Ratio	0.016	-	-	0.002	-	
HCM Control Delay (s)	9.9	-	-	7.6	0	
HCM Lane LOS	A	-	-	A	A	
HCM 95th %tile Q(veh)	0	-	-	0	-	

HCM 6th TWSC
21: Red Gate Lane & Strong Street

Build
PM Peak

Intersection						
Int Delay, s/veh	0.8					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	151	8	7	94	2	17
Future Vol, veh/h	151	8	7	94	2	17
Conflicting Peds, #/hr	0	15	15	0	0	6
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	2	0	0
Mvmt Flow	164	9	8	102	2	18




Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	188	0	302
Stage 1	-	-	-	-	184
Stage 2	-	-	-	-	118
Critical Hdwy	-	-	4.1	-	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4
Critical Hdwy Stg 2	-	-	-	-	5.4
Follow-up Hdwy	-	-	2.2	-	3.5
Pot Cap-1 Maneuver	-	-	1398	-	694
Stage 1	-	-	-	-	852
Stage 2	-	-	-	-	912
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1378	-	680
Mov Cap-2 Maneuver	-	-	-	-	680
Stage 1	-	-	-	-	840
Stage 2	-	-	-	-	907

Approach	EB	WB	NB
HCM Control Delay, s	0	0.5	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	820	-	-	1378	-
HCM Lane V/C Ratio	0.025	-	-	0.006	-
HCM Control Delay (s)	9.5	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM 6th TWSC
26: East Pleasant Street & Clark Hill Road

Build
PM Peak

Intersection						
Int Delay, s/veh	1.8					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	16	78	42	375	391	2
Future Vol, veh/h	16	78	42	375	391	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	5	1	0	0
Mvmt Flow	17	85	46	408	425	2




Major/Minor	Minor2	Major1	Major2
Conflicting Flow All	926	426	427
Stage 1	426	-	-
Stage 2	500	-	-
Critical Hdwy	6.4	6.24	4.15
Critical Hdwy Stg 1	5.4	-	-
Critical Hdwy Stg 2	5.4	-	-
Follow-up Hdwy	3.5	3.336	2.245
Pot Cap-1 Maneuver	301	624	1116
Stage 1	663	-	-
Stage 2	613	-	-
Platoon blocked, %			
Mov Cap-1 Maneuver	285	624	1116
Mov Cap-2 Maneuver	285	-	-
Stage 1	628	-	-
Stage 2	613	-	-

Approach	EB	NB	SB
HCM Control Delay, s	13.6	0.8	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1116	-	519	-	-
HCM Lane V/C Ratio	0.041	-	0.197	-	-
HCM Control Delay (s)	8.4	0	13.6	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0.1	-	0.7	-	-




HCM 6th TWSC
32: South East Street & Belchertwon Road

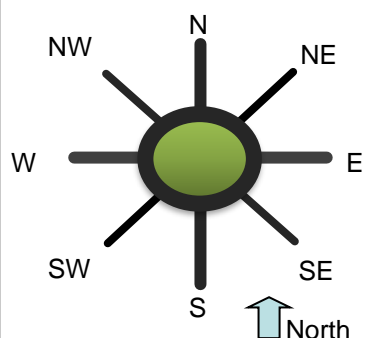
Build
PM Peak

Intersection						
Int Delay, s/veh	3.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	284	183	0	0	616
Future Vol, veh/h	4	284	183	0	0	616
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	4	4	0	0	7
Mvmt Flow	4	309	199	0	0	670
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	869	199	0	-	-	-
Stage 1	199	-	-	-	-	-
Stage 2	670	-	-	-	-	-
Critical Hdwy	6.4	6.24	-	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.336	-	-	-	-
Pot Cap-1 Maneuver	325	837	-	0	0	-
Stage 1	839	-	-	0	0	-
Stage 2	512	-	-	0	0	-
Platoon blocked, %			-			-
Mov Cap-1 Maneuver	325	837	-	-	-	-
Mov Cap-2 Maneuver	325	-	-	-	-	-
Stage 1	839	-	-	-	-	-
Stage 2	512	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	12.1	0	0			
HCM LOS	B					
Minor Lane/Major Mvmt	NBTWBLn1		SBT			
Capacity (veh/h)	- 819		-			
HCM Lane V/C Ratio	- 0.382		-			
HCM Control Delay (s)	- 12.1		-			
HCM Lane LOS	- B		-			
HCM 95th %tile Q(veh)	- 1.8		-			

HCM 6th TWSC
33: Wildwood Driveway & Strong Street

Build
PM Peak

Intersection						
Int Delay, s/veh	2.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	143	38	10	94	56	26
Future Vol, veh/h	143	38	10	94	56	26
Conflicting Peds, #/hr	0	13	13	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	0	0	0	3	0	0
Mvmt Flow	155	41	11	102	61	28
Major/Minor	Major1	Major2		Minor1		
Conflicting Flow All	0	0	209	0	313	189
Stage 1	-	-	-	-	189	-
Stage 2	-	-	-	-	124	-
Critical Hdwy	-	-	4.1	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.2	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	1374	-	684	858
Stage 1	-	-	-	-	848	-
Stage 2	-	-	-	-	907	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1357	-	670	847
Mov Cap-2 Maneuver	-	-	-	-	670	-
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	899	-
Approach	EB		WB		NB	
HCM Control Delay, s	0		0.7		10.7	
HCM LOS					B	
Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT	
Capacity (veh/h)	718	-	-	1357	-	
HCM Lane V/C Ratio	0.124	-	-	0.008	-	
HCM Control Delay (s)	10.7	-	-	7.7	0	
HCM Lane LOS	B	-	-	A	A	
HCM 95th %tile Q(veh)	0.4	-	-	0	-	

General & Site Information v 4.2									
Analyst:		Eric Beaudry							
Agency/Co:		Pare Corporation							
Date:		4/28/2022							
Project or PI#:		21245.00 Amherst Elementary Schools							
Year, Peak Hour:		2029 Build PM							
County/District:		Amherst, MA							
Intersection Name:		East Pleasant Street at Triangle Street							
									
Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			186		200		67	
	NE (2), vph								
	E (3), vph	107				51		267	
	SE (4), vph								
	S (5), vph	246		82				213	
	SW (6), vph								
	W (7), vph	34		355		173			
	NW (8), vph								
Output	Total Vehicles	387	0	623	0	424	0	547	0
Volume Characteristics		N	NE	E	SE	S	SW	W	NW
% Cars		99.0%	100.0%	100.0%	100.0%	95.0%	100.0%	96.0%	100.0%
% Heavy Vehicles		1.0%	0.0%	0.0%	0.0%	5.0%	0.0%	4.0%	0.0%
% Bicycle		0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)		0	0	0	0	0	0	0	0
PHF		0.92	0.95	0.92	0.95	0.92	0.95	0.92	0.95
F _{HV}		0.990	1.000	1.000	1.000	0.952	1.000	0.962	1.000
F _{ped}		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Entry/Conflicting Flows		N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h		0	0	202	0	228	0	76	0
NE (2), pcu/h		0	0	0	0	0	0	0	0
E (3), pcu/h		117	0	0	0	58	0	302	0
SE (4), pcu/h		0	0	0	0	0	0	0	0
S (5), pcu/h		270	0	89	0	0	0	241	0
SW (6), pcu/h		0	0	0	0	0	0	0	0
W (7), pcu/h		37	0	386	0	197	0	0	0
NW (8), pcu/h		0	0	0	0	0	0	0	0
Entry flow, pcu/h		425	0	677	0	484	0	618	0
Conflicting flow, pcu/h		672	0	501	0	495	0	477	0

Results: Approach Measures of Effectiveness

HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	688	NA	827	NA	793	NA	816	NA
Entry Flow Rates, vph	421	0	677	0	461	0	595	0
V/C ratio	0.61		0.82		0.58		0.73	
Control Delay, sec/pcu	16.2		24.8		13.5		18.9	
LOS	C		C		B		C	
Average Queue (ft)	47		117		43		78	
95th % Queue (ft)	106		228		100		170	




















Overall Intersection Measures of Effectiveness

Int Control Delay (sec)	19.1	Int LOS	C	Max Approach V/C	0.82
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Notes: v 4.2

Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

Mitigated Build Scenario 2
AM Peak

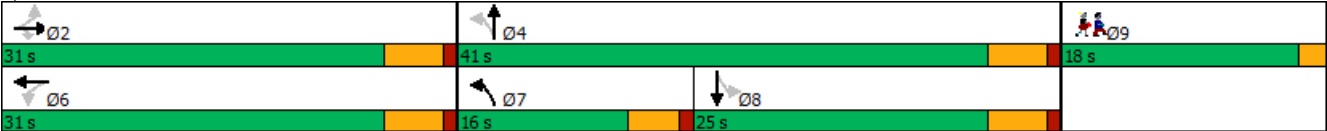
													
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	Ø9
Lane Configurations													
Traffic Volume (vph)	19	95	119	87	295	64	281	285	60	29	260	50	
Future Volume (vph)	19	95	119	87	295	64	281	285	60	29	260	50	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Storage Length (ft)	0		200	0		0	300		0	0		0	
Storage Lanes	0		1	0		0	1		0	0		0	
Taper Length (ft)	25			25			25			25			
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	
Ped Bike Factor		1.00	0.97		0.99			0.99			1.00		
Frt			0.850		0.981			0.974			0.980		
Flt Protected		0.992			0.990		0.950				0.996		
Satd. Flow (prot)	0	1839	1524	0	1788	0	1736	1792	0	0	1796	0	
Flt Permitted		0.862			0.903		0.217				0.936		
Satd. Flow (perm)	0	1596	1475	0	1628	0	396	1792	0	0	1686	0	
Right Turn on Red			Yes			Yes			Yes			Yes	
Satd. Flow (RTOR)			129		9			14			9		
Link Speed (mph)		30			30			30			30		
Link Distance (ft)		2205			457			209			3887		
Travel Time (s)		50.1			10.4			4.8			88.3		
Confl. Peds. (#/hr)	10		7	7		10			11	11			
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	
Heavy Vehicles (%)	0%	3%	6%	2%	3%	2%	4%	2%	6%	4%	3%	4%	
Adj. Flow (vph)	21	103	129	95	321	70	305	310	65	32	283	54	
Shared Lane Traffic (%)													
Lane Group Flow (vph)	0	124	129	0	486	0	305	375	0	0	369	0	
Turn Type	Perm	NA	Perm	Perm	NA		pm+pt	NA		Perm	NA		
Protected Phases		2			6		7	4			8		9
Permitted Phases	2		2	6			4			8			
Detector Phase	2	2	2	6	6		7	4		8	8		
Switch Phase													
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		5.0	6.0		6.0	6.0		5.0
Minimum Split (s)	13.0	13.0	13.0	13.0	13.0		9.5	11.0		11.0	11.0		18.0
Total Split (s)	31.0	31.0	31.0	31.0	31.0		16.0	41.0		25.0	25.0		18.0
Total Split (%)	34.4%	34.4%	34.4%	34.4%	34.4%		17.8%	45.6%		27.8%	27.8%		20%
Maximum Green (s)	26.0	26.0	26.0	26.0	26.0		11.5	36.0		20.0	20.0		16.0
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0		3.5	4.0		4.0	4.0		2.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0		1.0	1.0		1.0	1.0		0.0
Lost Time Adjust (s)		0.0	0.0		0.0		0.0	0.0			0.0		
Total Lost Time (s)		5.0	5.0		5.0		4.5	5.0			5.0		
Lead/Lag							Lead			Lag	Lag		
Lead-Lag Optimize?							Yes			Yes	Yes		
Vehicle Extension (s)	3.0	3.0	3.0	3.0	3.0		3.0	3.0		3.0	3.0		3.0
Recall Mode	Min	Min	Min	Min	Min		None	None		None	None		Ped
Walk Time (s)													5.0
Flash Dont Walk (s)													11.0
Pedestrian Calls (#/hr)													0
Act Effct Green (s)		26.0	26.0		26.0		36.5	36.0			20.0		
Actuated g/C Ratio		0.29	0.29		0.29		0.41	0.40			0.22		
v/c Ratio		0.27	0.25		1.02		0.92	0.52			0.97		
Control Delay		26.6	6.0		79.8		56.3	22.7			74.8		
Queue Delay		0.0	0.0		0.0		0.0	0.0			0.0		
Total Delay		26.6	6.0		79.8		56.3	22.7			74.8		
LOS		C	A		E		E	C			E		
Approach Delay		16.1			79.8			37.8			74.8		
Approach LOS		B			E			D			E		
Queue Length 50th (ft)		54	0		~282		122	151			204		
Queue Length 95th (ft)		101	40		#485		#259	236			#383		
Internal Link Dist (ft)		2125			377			129			3807		
Turn Bay Length (ft)			200				300						
Base Capacity (vph)		461	517		476		331	725			381		
Starvation Cap Reductn		0	0		0		0	0			0		
Spillback Cap Reductn		0	0		0		0	0			0		
Storage Cap Reductn		0	0		0		0	0			0		
Reduced v/c Ratio		0.27	0.25		1.02		0.92	0.52			0.97		
Intersection Summary													

Lanes, Volumes, Timings
5: South East Street/North East Street & Main Street

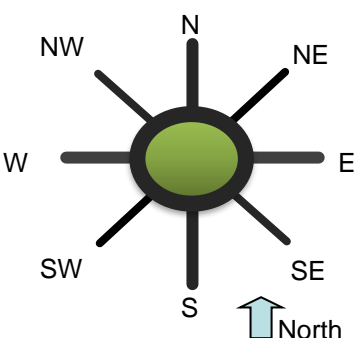
Mitigated Build Scenario 2
AM Peak

Area Type:	Other		
Cycle Length:	90		
Actuated Cycle Length:	90		
Natural Cycle:	90		
Control Type:	Actuated-Uncoordinated		
Maximum v/c Ratio:	1.02		
Intersection Signal Delay:	53.8	Intersection LOS:	D
Intersection Capacity Utilization	80.7%	ICU Level of Service	D
Analysis Period (min)	15		
~	Volume exceeds capacity, queue is theoretically infinite.		
	Queue shown is maximum after two cycles.		
#	95th percentile volume exceeds capacity, queue may be longer.		
	Queue shown is maximum after two cycles.		

Splits and Phases: 5: South East Street/North East Street & Main Street



General & Site Information v 4.2								
Analyst:		Eric Beaudry						
Agency/Co:		Pare Corporation						
Date:		4/28/2022						
Project or PI#:		21245.00 Amherst Elementary Schools						
Year, Peak Hour:		2029 Mitigated Build Scenario 1 AM						
County/District:		Amherst, MA						
Intersection Name:		Strong Street at Wildwood						



Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph								
	NE (2), vph								
	E (3), vph					45		46	
	SE (4), vph								
	S (5), vph			54				224	
	SW (6), vph								
	W (7), vph			169		156			
	NW (8), vph								
Output	Total Vehicles	0	0	223	0	201	0	270	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	96.0%	100.0%	99.0%	100.0%	92.0%	100.0%	96.0%	100.0%
% Heavy Vehicles	4.0%	0.0%	1.0%	0.0%	8.0%	0.0%	4.0%	0.0%
% Bicycle	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	0.92	0.95	0.92	0.95	0.92	0.95	0.92	0.95
F _{HV}	1.000	1.000	0.990	1.000	0.926	1.000	0.962	1.000
F _{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	0	0	0	0	0	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	0	0	0	0	53	0	52	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	0	0	59	0	0	0	253	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	0	0	186	0	183	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	0	0	245	0	236	0	305	0
Conflicting flow, pcu/h	0	0	183	0	52	0	59	0

Results: Approach Measures of Effectiveness

HCM 6th Edition	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	NA	NA	1134	NA	1212	NA	1249	NA
Entry Flow Rates, vph	0	0	242	0	218	0	293	0
V/C ratio			0.21		0.18		0.23	
Control Delay, sec/pcu			5.1		4.5		4.9	
LOS			A		A		A	
Average Queue (ft)			9		7		10	
95th % Queue (ft)			20		18		24	

Overall Intersection Measures of Effectiveness

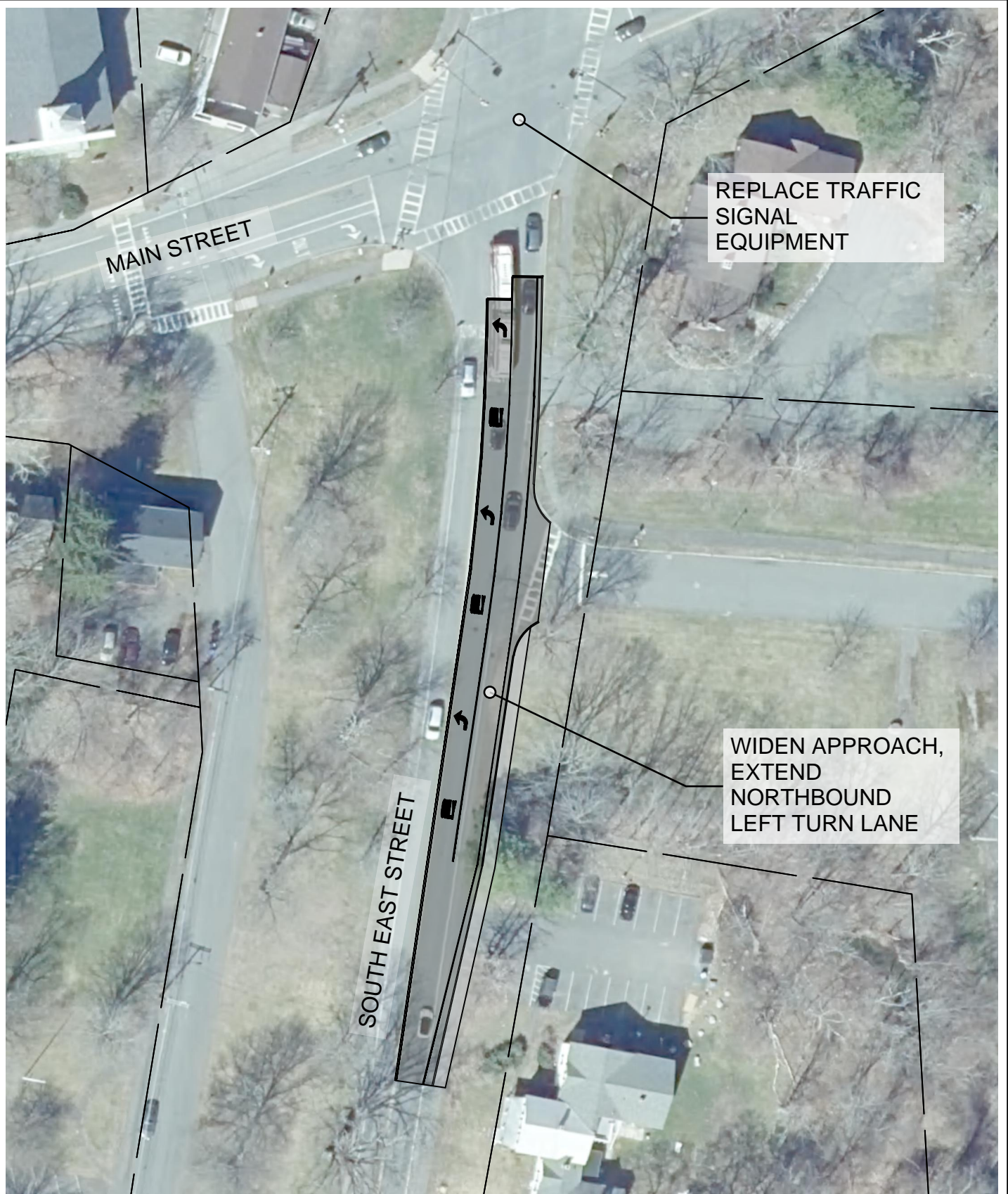
Int Control Delay (sec)	4.9	Int LOS	A	Max Approach V/C	0.23
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Notes: v 4.2

Appendix G

Roundabout Conceptual Design





PARE CORPORATION
ENGINEERS - SCIENTISTS - PLANNERS
8 BLACKSTONE VALLEY PLACE
LINCOLN, RI 02865
401-334-4100

PROJECT NO. 21245.00

DATE: May 2022

Amherst Elementary School Traffic Study

Main Street, North East Street & South East Street
Improvement Alternative

Amherst, MA



**AMHERST
STRONG STREET**

STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
MA		1	1
PROJECT FILE NO.			

CONCEPT ROUNDABOUT

**WILDWOOD
ELEMENTARY SCHOOL**